IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

SYNGENTA CROP PROTECTION, LLC., Plaintiff, vs. WILLOWOOD, LLC, WILLOWOOD USA, LLC., WILLOWOOD AZOXYSTROBIN, LLC, and WILLOWOOD LIMITED, Defendants.	Civil Action No. 15CV274 September 12, 2017

TRANSCRIPT OF JURY TRIAL
BEFORE THE HONORABLE CATHERINE C. EAGLES
UNITED STATES DISTRICT JUDGE

APPEARANCES:

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I N D E X

P R O C E E D I N G S

(At 9:32 a.m., proceedings commenced.)

THE COURT: Good morning. I think we're still waiting on one juror, but she's in the building and just not quite up to the jury room yet. I thought I'd go ahead and check in with you all and see if there was anything we needed to take care of before the jury comes.

MR. SANTHANAM: Yes, Your Honor. Yesterday, last night, we received demonstrative slides from the defendants that they plan to use with Mr. Jarosz, their damages expert. There are two slides that we object to. And if you would like, we can put them up on the screen for you to review.

THE COURT: Okay.

MR. SANTHANAM: Slide 20 and Slide 22. Essentially -- this is one of the slides that they provided as part of their demonstratives. It's an excerpt from the deposition of Dr. Wilner. We've heard no testimony in this case about any non-infringing alternatives. It appears they're going to try and rely on a deposition excerpt of Dr. Wilner regarding a conversation he had with Dr. Alan Whitton about certain increases in prices or costs in manufacturing. We have heard absolutely no foundation for this, and what it amounts to --

THE COURT: Who's this going to come in through?

MR. NEUMAN: Beg your pardon, this is going to come

in through John Jarosz, our damages expert, testimony -- information he relied on to form his opinions, not for the truth.

THE COURT: All right. I was just making sure.

MR. SANTHANAM: And our objection is two-fold, Your Honor.

THE COURT: Yes?

MR. SANTHANAM: First, it basically amounts to an improper deposition designation. They're putting up an excerpt of a deposition. If they wanted to do this, they should have provided notice back on June 2nd when pretrial disclosures were due; and, second, there's been absolutely no foundation for this in this trial. If they wanted to ask the witnesses Dr. Whitton and Dr. Wilner, they had the opportunity to do so. They shouldn't be allowed to put forth a deposition excerpt.

THE COURT: All right. What does Willowood say?

MR. NEUMAN: This is information which Mr. Jarosz provided as a basis for his royalty report in his supplemental expert report provided last year.

THE COURT: Okay. So there's two parts to the objection.

MR. SANTHANAM: That's correct.

THE COURT: Part 1, can they show the deposition transcript to the jury?

MR. SANTHANAM: That's correct, and we object to

that, Your Honor, because it's an improper deposition designation.

THE COURT: Part 2 is can Mr. Jarosz testify about this?

MR. SANTHANAM: Right. And if Your Honor would recall, we filed a Daubert motion saying that Mr. --

THE COURT: No, I remember. I just want to be sure I understood your objection. So if I can ask the Defendant to respond to those two parts of that, because I'm not hearing -- I mean, your response doesn't seem responsive, if I can say it that way.

MR. NEUMAN: Well, our response is that -- I'm not sure why -- tell me why it's not responsive. This is information that Mr. Jarosz has stated in his expert report from last year he relied on.

THE COURT: There has to be -- that doesn't appear to direct -- to respond to the objection to showing the deposition testimony to the jury. We went over the prongs of, I think, it's 703 yesterday about relying on inadmissible evidence -- or evidence not in evidence -- statements not in evidence. Let me say it a different way. This is not in evidence, what he relied on, that I recall. So I'm not -- I'm just not hearing you respond to that.

MR. NEUMAN: Well, if we can ask him what he relied on without showing the exhibits, we'd be prepared to do that.

THE COURT: Okay. And then your -- okay. And then as to the second part, you're saying, well, he relied on it, and it doesn't have to be admissible for him to rely on it.

MR. NEUMAN: Correct, correct.

THE COURT: Or in evidence?

MR. NEUMAN: Correct.

MR. SANTHANAM: Your Honor, they'd be disclosing it either way by telling the jury --

THE COURT: I'm sorry, say again.

MR. SANTHANAM: They would be disclosing it either way by telling the jury what specifically he relied on. It doesn't have to be a demonstrative on a screen before them. If they say these are the numbers that I relied on, that's disclosing his underlying facts.

THE COURT: I mean --

MR. SANTHANAM: And we would again refer back to the Daubert motion, Your Honor, where -- our main objection when we filed our Daubert motion was that he needed bases for his opinions; and Your Honor's ruling, as we understood it, was they would need to present factual foundations for his testimony. They have not.

(Short pause.)

MR. SANTHANAM: And they could have --

THE COURT: Okay. Stop talking. I'm not pausing to give you more time. I'm pausing to think, and I have trouble

thinking when people are talking, so just give me a minute.

Okay. So can I ask the Defendant to respond to this again, because I know he can rely on evidence -- you know, evidence is even really the wrong word. An expert doesn't have to consider only admissible evidence in forming his or her opinion, but I'm having a little trouble understanding how this is going to be helpful to the jury when there's nothing to support it in the record. I mean, the jury --

MR. NEUMAN: My understanding of Rule 703 is it does not have to be in the record to be something that the expert reasonably can rely on.

THE COURT: But he has no expertise in whether or not there is a 40 percent or 50 percent increase in cost by using some other method, and he has no expertise in whether any other method actually could be used; so if the jury has no information that there's another method, how is this helpful to the jury?

MR. NEUMAN: Because the reason that this information is relevant to Mr. Jarosz's opinion is in connection with the hypothetical negotiation to support a reasonable royalty, and he will concede that he is not an expert as to whether these percentages are accurate. His testimony will be that the fact that Syngenta's own people told their expert economist that these numbers apply supports his view as to what the position of Syngenta would be in a hypothetical negotiation, not whether

these numbers are accurate or not.

THE COURT: Okay. What does the Plaintiff say?

MR. SANTHANAM: Your Honor, none of this is in evidence. If they wanted to put this -- present this basis, they had the opportunity to ask Dr. Whitton, they had the opportunity to ask Dr. Wilner, and they chose not to. In fact, what this reflects is a backdoor attempt to try to bring in something that's not in evidence having had the opportunity to question these witnesses about it. So they shouldn't be allowed to present underlying bases under Rule 703, which requires the probative value to substantially outweigh the prejudicial effect. As Your Honor mentioned, there's no basis in the record for this as of yet.

MR. NEUMAN: Your Honor, this was --

THE COURT: Two comments. First, you can't show the deposition, because I'm generally not letting people do that, and it's not before the jury otherwise, so -- and I don't think it comes in under 703. I'll otherwise let you proceed and overrule the objection to the extent it's to him testifying.

Did you have an objection to another slide?

MR. SANTHANAM: No, Your Honor.

THE COURT: Is that clear?

MR. SANTHANAM: Yes.

THE COURT: Anything else before the jury comes in?

MR. TILLER: Your Honor, very briefly. As we've been

saying, some housekeeping matters. One, we proffered yesterday but neglected to move into evidence DX-6, DX-118, DX-119 and DX-121. We would move for their admission.

MR. SANTHANAM: We don't have any objection, Your Honor.

THE COURT: They'll be admitted.

MR. TILLER: Thank you, Your Honor.

And very briefly, I mentioned yesterday a notice that we were going to be filing that obviously the Court didn't have to deal with. We sort of -- Mr. Harrell realized at the last second that if we did it the way we were planning on doing it, that could subject some Syngenta documents into the public record, and we wanted to not go down that road, given all the concerns.

THE COURT: Okay.

MR. TILLER: So we have -- it's already been on file. Your Honor probably hasn't even seen it yet. We filed an identification -- just a list of the exhibits, and then we'll come up -- we'll talk to Syngenta about a way to make sure those are in the record, obviously not going back to the jury.

THE COURT: Okay. And this has to do with my ruling on the motions --

MR. TILLER: The motions in limine.

THE COURT: -- the week before trial about late disclosed -- I concluded were late disclosed exhibits?

MR. TILLER: Exactly, Your Honor. We just wanted to make the record clear. That's all.

THE COURT: All right. I'll let you all figure that out. Anything else?

MR. TILLER: No, Your Honor.

THE COURT: All right. You can bring the jury in.

(At 9:44 a.m., jury present.)

THE COURT: Good morning. We're ready to continue, so Willowood can call their next witness.

MR. NEUMAN: Your Honor, the defendants call John Jarosz.

THE COURT: Go ahead.

MR. NEUMAN: Your Honor, may I approach with a binder?

THE COURT: You may. Go ahead.

JOHN C. JAROSZ,

DEFENDANT'S WITNESS, SWORN AT 9:44 A.M.

DIRECT EXAMINATION

BY MR. NEUMAN:

Q. Good morning. Could you please state your full name for the record, sir.

A. John C. Jarosz.

Q. And what do you do for a living?

A. I'm an economist.

Q. Generally, what does an economist do?

A. Formally, we study how societies and governments and industries and consumers allocate resources among themselves. On a more practical basis, what we do in microeconomics is we evaluate market dynamics. We evaluate how companies and consumers act and react in a marketplace to determine what are prevailing prices and what are the volumes associated with those prices. We look to see how consumers react to producer actions and producers react to consumer actions. So it's all very formal, but we do the best we can to talk about real activity, and we'll see that through the course of my testimony, I think.

Q. Do you specialize in any particular area of economics?

A. Generally, I work in the area of applied microeconomics. Specifically, my focus is on the evaluation and valuation of intellectual property rights. A patent is a form of intellectual property. So I seek to determine how much patents are worth, sometimes outside of courtroom having nothing to do with litigation and sometimes in the courtroom when one party has sued another party for patent infringement, and the question becomes how much money should be paid?

Q. Can you summarize your educational background for the jury, please.

A. Yes. I have a BA, a bachelor's, in economics and organizational communication from Creighton University, which is in Omaha, Nebraska. After that, I was a fellowship student

in the Ph.D. program in economics at Washington University, which is in St. Louis. I completed most of the requirements there, including the preliminary examinations, the background work that needs to be done, but I ultimately decided not to finish my Ph.D. at Washington University and was awarded a master's in economics.

Q. And what types of courses did you take in working towards your bachelor's and master's degree?

A. I took courses in microeconomics and macroeconomics, government regulation of business, finance, marketing, management, a whole array of business oriented kind of courses.

Q. And could you just clarify what microeconomics is as opposed to what macroeconomics is?

A. Sure. Microeconomics is the study of how producers and consumers act when we buy things and companies make things available to us. Macroeconomics is more the study of the economy, inflation rates, death rates, those kinds of things. I know much less about macroeconomics than microeconomics. Unfortunately, most of times the when I get in a cab, the driver asks me, You're an economist? So tell me about where the economy is going. And I say, I have no idea, that's not my area. What I study is how consumers and producers act.

Q. Now, why did you decide not to complete your Ph.D. program at Washington University?

A. Well, I was in good standing and had the opportunity to

complete my Ph.D. but decided at that point I was not interested in teaching economics at a graduate or at a university level. The strengths of the programs were a little bit different than the things I was most interested in, and I wanted to move closer to a romantic interest of mine, closer to be near a woman who became my wife, and we've been married for 33 years and have raised six kids, so I think that was a good decision.

Q. And did you obtain any other degrees after that?

A. Yes. After that, after I was married, I attended law school at the University of Wisconsin in Madison, Wisconsin. There, I took the normal array of courses in law, but I had a particular focus on topics having to do with law and economics. I ultimately received my JD from the University of Wisconsin.

Q. Have you ever practiced law?

A. I have not. I've been on inactive status in the State Bar of Wisconsin for the last 32 years.

Q. Are you a member of any professional organizations or associations?

A. I'm a member of quite a number. It helps me keep up and active in the industry and in the discipline. I'm a member of the American Intellectual Property Law Association, the American Economics Association, the American Law & Economics Association, the Licensing Executive Society, the Intellectual Property Owners Association, and The Sedona Conference. Those

are all places that I contribute to and, importantly, get information from about developments.

Q. You mentioned The Sedona Conference. What is that?

A. It's a small group of judges and lawyers and economists who are working together to try to move the law forward in a just and a reasonable fashion. We're trying to make changes to the extent we can to help the law become more accessible and more sensible to the extent we can. I have had a particular focus on the evaluation and presentation of patent damages.

Q. And do you serve on any committees or working groups of The Sedona Conference?

A. Yes, I've been fairly active in several working groups. Working groups are smaller sets within Sedona that focus on particular issues. The two groups I've been most active with have focused on early resolution of damages cases so we don't get all the way to trial like this, try to get rid of the cases that shouldn't come to trial. And, also, I've been very active in evaluation and presentation of patent damages. A particular subgroup focuses on reasonable royalty estimation in particular, and I've been very active with that.

Q. How does one get appointed to -- or have the opportunity to serve on these working groups?

A. It's a combination of your interest in topics, your availability to participate in these working groups, and your promise to actually do work rather than just read and comment,

to actually meet and write and present findings, and so those of us in the working groups have all committed to do that.

Q. Are there any other ways that you keep active in the field of economics?

A. Yes. I fairly regularly research and publish articles in professional practitioner journals. I give presentations on a regular basis, both live presentations and webinar presentations, and I teach classes at various institutions.

Q. Where do you teach classes?

A. Among the places that I teach are the Georgetown Law School, the George Washington Law School, and the US Patent and Trademark Office.

Q. Have you offered an expert opinion -- economic opinion in other cases involving the appropriate amount of damages resulting from alleged patent infringement?

A. Yes. I've been involved in hundreds of patent infringement cases, more than 300 probably, and I've provided testimony in courtrooms like this having do with patent damages on perhaps 60 occasions over the years.

THE COURT: Did you say 6 or 60?

THE WITNESS: Six-zero.

BY MR. NEUMAN:

Q. And has that been on behalf of -- your testimony been on behalf of plaintiffs or defendants or both? How would you sort that out?

A. It is about 50/50. In other words, about half the time my work is for companies who own patent rights and are attempting to enforce them, and about half of my work is working for companies who have been accused of infringement and trying to decide how much money should be paid.

Q. Where do you work?

A. I work at a company called Analysis Group, Incorporated. We are an economic financial strategy and healthcare consulting firm of about 750 people. We have offices throughout North America and overseas. We now have three overseas offices in addition to, I think, nine North American offices.

Q. What is your position, title, at Analysis Group?

A. I'm a managing principal of the firm, which means I'm one of the owners of the firm. I'm also the founder and director of the firm's Washington, D.C., office.

Q. How long have you been employed by Analysis Group?

A. Since March of 1996, so that's about 21 -- a little bit over 21 years.

Q. What did you do prior to that?

A. For about ten years prior to that, I was at a similar economic consulting firm. I was also head of that firm's Washington, D.C., office.

Q. Now, is Analysis Group being paid for your work in this case?

A. We're being paid for the effort that we undertake to look

at the issues. So we're getting paid for the time that we devote to our study.

Q. Is that payment dependent in any way on the outcome of this case?

A. Not at all.

Q. Have you provided expert testimony or consulting services in connection with the agrichemical business?

A. I have on several occasions in the past. It's not my speciality, but it is one of the areas in which I have done work. Included is the fact that I worked for Syngenta on a number of occasions in the past on patent infringement damages cases.

Q. Have you ever testified -- can you give an example of two of that kind of work?

A. Well, I work with companies that have had skirmishes about genetically-modified seed. And I've worked for companies that have been in court having to do with herbicide intellectual property issues. As I said, I've worked for Syngenta in the past.

Q. Have you ever testified as an expert on damages here in North Carolina before?

A. Yes, on several occasions.

MR. NEUMAN: Your Honor, we offer Mr. Jarosz as an expert in the field of intellectual property valuation and the analysis of damages arising from alleged infringement of

intellectual property.

MR. SANTHANAM: Your Honor, we do object, but we're going to address that on cross-examination.

THE COURT: You don't have any questions about his qualifications now?

MR. SANTHANAM: Not at this time.

THE COURT: All right. He may so testify.

BY MR. NEUMAN:

Q. Mr. Jarosz, what have you been asked to do in this case?

A. I was asked to do two things. First, evaluate the work that was done by Dr. Wilner on the damages issues; and secondly, come to my own independent opinion as to how much money should be paid in damages if the jury finds that the patents are valid and infringed.

Q. And did you perform this work alone?

A. No. I work with a number of colleagues of mine at Analysis Group, three or four that work very closely with me, and five or six others have been available on an as-needed basis.

Q. Did they all work under your supervision on this project?

A. Yes.

Q. What materials, generally speaking, did you review in conducting your work for this case?

A. We looked at thousands of pages of material. Fortunately, these days, much of that material is electronic so you don't

have to print it all out. But we looked at quite a number of documents produced by both Syngenta and Willowood, things describing marketplace, financial performance, sales performance, market share, internal correspondence.

I've also looked at quite a bit of deposition testimony for a number of the witnesses that have been deposed here. I looked at the court filings that had to do with the damages topics, and I've evaluated and reviewed the various expert reports.

Q. And have you been present during the course of this trial listening to the witness testimony?

A. Yes, I have.

Q. For the entire trial?

A. Yes, I believe so. I can't remember if I stepped out for a moment during one segment, but I don't -- I don't think I did.

Q. What's your understanding of the patented technology at issue in this case?

A. I understand that are two patents that are called compound patents, the '076 and '256, that cover the active ingredient azoxystrobin. I understand that there are two other patents, though, 136 and -- '138 and the '761, I think I have those numbers correct, that deal with particular processes to make azoxystrobin.

Q. Now, are you here to testify and offer an opinion about

whether Syngenta's patents are valid and enforceable?
A. No, other people have addressed that topic.
Q. Now, before we dive into the details of your opinions, you understand that Syngenta claims that it has suffered lost profits as a result of Willowood's alleged infringement?
A. Yes, I understand that.
Q. And what are lost profits?
A. Lost profits can be thought of as the sales that the patent owner may have lost due to the infringing activity and the profits associated with those sales. In particular, there are two components of lost profits.

Number one is lost volumes, where there are accounts that were made by Willowood that would otherwise have been made by Syngenta. Secondly, was there price erosion; in other words, did Syngenta need to lower its price because of the alleged infringement. So lost sales and price erosion are the two components of lost profits. Lost sales is very common in a lost profits analysis. Price erosion is very rare.

Q. Now, if lost profits are found not to be proven in this case, is there another accepted method to determine damages in patent infringement cases?
A. Yes. The alternative is something called a reasonable royalty.
Q. Could you explain at a very high level what a reasonable royalty is?

A. A reasonable royalty can be thought of as a license fee that should have been paid by the alleged infringer to the owner of the patents for use of the patents. So it's a payment, assuming infringing activity.

Q. Now, have you reached a conclusion to a reasonable degree of economic certainty as to what reasonable royalties would be in this case, assuming infringement of the patents at issue?

A. Yes. I've drawn a conclusion as to reasonable royalties. I've also drawn a conclusion as to lost profits.

Q. I'm asking you about reasonable royalties.

A. Yes.

MR. NEUMAN: All right. Could we please look at -- and Bonnie, could you put up Jarosz Slide 5, Demonstrative 5. Beg your pardon, 6.

BY MR. NEUMAN:

Q. Does this slide summarize your opinions as to reasonable royalty?

A. Yes, it does.

Q. And could you just state what your opinions are?

A. For the compound patents, I believe a reasonable royalty payment is not -- it's insignificant based on testimony that I've heard and I think we'll be discussing in a short while.

With regard to the '138 patent, reasonable royalty damages are no more than $1.4 million. With regard to the '761 patent, reasonable royalties are no more than $900,000.

Q. All right. Thank you, sir. You can take that down, Bonnie. We'll come back to reasonable royalties later.

Let's focus for now on lost profits. Do you believe that Syngenta has shown that it has suffered lost profits on account of the infringement of the compound patents?

A. No.

Q. Let's talk about the compound patents. Why do you -- why do you say that?

A. Underlying Dr. Wilner's analysis of lost profits is a belief that it was necessary for Willowood to get in the market for there to be the importation of this 5 kilograms, or 11 pounds, of azoxystrobin technical in 2013. And because of that, Willowood was able to get to the market sooner than it otherwise should have been able to and impacted Syngenta to the tune of $75.6 million.

In fact, Willowood did not need to import that 5 kilograms to enter the market when it did to get EPA approval on time and to enter it in the middle of 2014. It had the ability to conduct all the necessary testing overseas that would not have infringed the compound patents, and everything else would have remained the same.

Q. What's the basis for that understanding, Mr. Jarosz?

A. It primarily comes from the testimony of Janelle Kay, who testified a few days ago about overseas testing and the ease with which that could have been done by Willowood, and I think

Mr. Brian Heinze talked about that topic as well.

Q. Has Dr. Wilner -- sorry. You were here for Dr. Wilner's testimony?

A. Yes, I was.

Q. Has he cited any evidence to contradict Ms. Kay's and Mr. Heinze's testimony on that issue?

A. No. In fact, he testified he didn't even investigate that issue.

Q. Okay. Now, let's discuss your assessment of Dr. Wilner's analysis. You're aware that Dr. Wilner has testified that the appropriate compensation here is $76 million -- at least $76 million in lost profit damages for the compound patent infringement?

A. Yes. I think, specifically, he said $75.6 million.

Q. Beg your pardon. You're right.

Now, could you -- is there -- do you have a demonstrative that explains your understanding of how Dr. Wilner arrived at his numbers?

A. Yes, I do.

MR. NEUMAN: Bonnie, could you put up Jarosz Demonstrative 7.

BY MR. NEUMAN:

Q. Do you have that in front of you, Mr. Jarosz?

A. Yes, I do.

Q. So using this demonstrative, could you walk through for

the jury how Dr. Wilner derived this $75.6 million damages figure?

A. Yes. He did it in three steps. He evaluated what he thought Syngenta planned to obtain in profits for azoxystrobin from 2014 onward. He then sought to determine what they should have received in light of market conditions. And, third, he evaluated what they did receive in gross profits, and subtracted what they did receive from what they should have received.

So, to be a little bit more specific, the top left chart there, called "Estimated Budget," Dr. Wilner started with the budget for 2014 and plotted it here at the top of that orange line. He says this is what Syngenta planned to receive in the business. He then estimated what the budget should have been in 2015, 2016, and 2017. In other words, he adjusted Syngenta's budgets based on market conditions and said they should have had budgets that are reflected in that orange line.

The second step, then, which is right below that, is he said, I understand that other things were going on in the marketplace. It was a tough business, and there were other factors that might explain why Syngenta wouldn't realize its budget for azoxystrobin. And he said, the way to adjust for that is to see how the market impacted mesotrione. In other words, the same factors that impacted mesotrione should have impacted azoxystrobin, so let me adjust that budget down. And

so, what was the orange line for Dr. Wilner becomes the red line. He adjusts it ever so slightly for events occurring in the marketplace.

Then, in his third step, which is shown off to the right, he says, let's take that green line and compare that with the blue line, which is what Syngenta actually realized on all of its azoxystrobin products for gross profits, and that difference, that shaded gray area, is lost profits.

Now, there's one other very small thing that he did here; it's almost not worth mentioning. He deducted a little bit more in additional costs. It was .1 percent of gross profits to account for some overhead costs. But, for the most part, what you see here in the third panel is what results in his $75.6 million number.

Q. Have you prepared a slide that summarizes your primary critiques of Dr. Wilner's analysis?

A. Yes, I have.

MR. NEUMAN: Bonnie, could you bring up Jarosz 8, please.

BY MR. NEUMAN:

Q. Does this slide reflect at a high level your critiques -- primary critiques of Dr. Wilner's analysis?

A. Yes. I've broken it down into three categories. First, he relied extremely heavily on Syngenta forecasts, which have been shown to be historically inaccurate. Second, the

adjustment he made in those forecasts was based only on the mesotrione experience, yet mesotrione is not a sufficiently comparable benchmark. And last, he over-emphasized the importance of Willowood. In other words, there were other generics before Willowood and during Willowood's time. They would have continued in the marketplace. And with Willowood gone, they likely would have been more aggressive trying to obtain sales and profits. Those companies would not have gone away.

Q. All right. Let's talk about each of these in a little more detail. So, first, let's talk about Syngenta's budget forecasting. Is it important that Syngenta's forecasting be accurate in order for Dr. Wilner's approach to be reliable and credible?

A. It's absolutely critical. It was -- at the heart of the first step of the analysis was the budget forecast, in particular, the 2014 budget forecast. So, the higher that is, the higher the damages are; the lower it is, the lower damages are. So everything is keyed off the budget forecast. That's the most important starting or building block for his analysis.

Q. And have you taken a look a little more specifically at how sensitive Dr. Wilner's damages numbers are to variations in the budget?

A. Yes, I have.

Q. And could you give the jury an illustration -- some

numerical illustrations of how his damages calculation would vary depending on various swings in the accuracy of the budgets?

A. Very small changes in just the 2014 budget have dramatic impacts on his damages number. A 10 percent change impacts his damages number by $46 million. A 20 percent change, in other words, an inaccuracy of 20 percent, adjusts the number by $96 million. And a 30 percent change adjusts it by $140 million. So the damages are very, very sensitive to the starting point, and now, I'm just talking about the one year, the 2014 starting point.

Q. Did Dr. Wilner, to your understanding, examine how reliable Syngenta's forecasts were in the past?

A. No, he did not. He just accepted those budgets as they were presented.

Q. Now, you mentioned that those budgets exhibit significant variability and limited accuracy. Let's talk about those forecasts. Could you flip to Demonstrative 9, please, Bonnie?

And could -- does this slide depict the variations in the accuracy of Syngenta's budget forecasting over a number of years?

A. Yes. You can see that this has been a very difficult business to forecast in, and Syngenta has not done a particularly good job. It certainly has tried, but there's been a lot that has resulted in actual performance varying

quite a bit from projected performance.

So you see, in 2009 and 2010, which is well before any of the activity that's at issue here occurred, that the budget was off by 39 to 50 percent. Some of this was discussed in the testimony of Mr. Cecil. I just portrayed these in bars, but the underlying numbers were there. And you'll see virtually every year, the budget and actual difference is quite substantial. In 2013, again, before impacts that Dr. Wilner's talking about, it was off by almost 18 percent.

So you see there is quite a bit of variation between budget and actual. The budget for Syngenta has not been particularly successful at projecting what the actual performance would be.

Q. Remind the jury, if the budget is off by 20 percent, what -- how does that reduce the damages calculation?

A. The damages become zero under Dr. Wilner's analysis.

Q. Now, did Dr. Wilner provide any explanation for these wide variations?

A. After the fact, he said -- and he talked about this the other day in testimony. He said five of the six years, I think he was talking about 2009 through 2014, there's an explanation for why five of those six years are off, and it's a one-time explanation. So he acknowledged that only 2012 is close and all the others are off. He said, for the early ones, it was because of the Great Recession. He pointed us to 2009 through

2011.

Curiously, though, 2011, the actual was higher than the budget, so I'm not quite certain of his point there. And then, with the later points, he said, well, there was a Great Midwestern Drought in 2012, and presumably, that impacted 2013. So these years were all off for reasons he could explain after the fact.

The fact of the matter is, however, that the budgets have not been particularly accurate.

Q. Did Dr. Wilner do any -- make any effort to test the validity of his explanations of his hypotheses about the causes of these variations, drought, the Great Recession, and so forth?

A. No. I think the only thing that he did is say he was convinced that there was a careful process in putting the budget together, but he didn't look at earlier results or test why these differences occurred, and as a result, come to the conclusion that a budget is a good basis for his damages amount.

Q. So to be specific, in the face of these kinds of swings in budget inaccuracy, both over and under predicting actual sales, if you were to hypothesize that for certain years those variations were due to the great recession, would you take that hypothesis at face value as an economist, or would you try to validate and verify that particular assumption?

A. I would try to validate it in two ways. First, I would say, okay, let's go look to see how close the budget was versus actual before the great recession. The company has been in the azoxystrobin business since approximately the year 2000, so why not go look to see whether before the great recession the budget was a pretty good estimator, but he didn't do that, so I don't know whether that was valid.

And then I also, if I had seen these kind of variations, would have asked myself, what precisely went into the process of determining the budgets. Why were they so wrong, and I would have liked to seen if the great recession was completely unanticipated in 2009 and then 2010 and then 2011. And I would like to see if the great midwest drought was on their minds in 2012 and then not realizing 2013, so I'd want to do more analysis.

Q. And did Dr. Wilner do any of that?

A. No.

Q. Now, to -- for a starting point -- you can take this down, Bonnie. Thank you.

For a starting point, with regard to these budgets, for 2014, what budget did Dr. Wilner use?

A. He used the budget that was put together in October or November of 2013, so it was what the company agrees on, getting the input of a variety of individuals, for what the upcoming year will be.

Q. Now, do you agree with Dr. Wilner's choice of the fall 2013 budget for 2014 performance as his benchmark for calculating lost -- one of his benchmarks for calculating lost profits?

A. No. Infringing -- alleged infringing sales by Willowood didn't start until July 2014, so it was halfway into the year, not before the year began.

Q. And, in fact, after the budget was prepared, annual budget was prepared in the fall of 2013, did Syngenta update those forecasts?

A. Yes, on roughly a monthly basis it did, and there's been testimony about this latest projection or last projection, in which they continue to update the budget for what they expect that upcoming year to realize, and they certainly did that in the first part of 2014.

Q. And have you calculated how Dr. Wilner's damage estimates would change if he had used more accurate budget forecast prepared after the fall of 2013, closer to the time that Willowood entered the market?

A. Yes, I did.

Q. Have you prepared a slide that shows that analysis?

A. Yes.

MR. NEUMAN: Bonnie, could you pull up Jarosz 10.

BY MR. NEUMAN:

Q. Does this slide show the results of that analyze that you

did, Mr. Jarosz?
A. Yes, it did.
Q. And can you walk the panel through what it shows, please.
A. Yes, on the far left, that darker orange bar, that shows what Dr. Wilner did. He relied on the October/November 2013 budget for what would occur in 2014, and the result was his damages number of $75.6 million.

If, however, you use the LPs or the updates to the budget as the time goes on, all of these are before first infringing sale, you'll see tremendous sensitivity in the damages analysis, such that the numbers drop quite dramatically, and by April -- using the April 2014 projections of revenues and gross profits, his damages model would suggest no damages, and that would be true whether you use the April, May or June LPs. The result would be a dramatic change from the number he presented to the jury.

Q. Now, is there underlying data that you looked -- or information that you looked at that is -- that supports and is reflected in Jarosz 10?
A. There's a ton, and which excites we economists, but not all human beings.
Q. And have you prepared a slide that summarizes the underlying data?
A. Yes.

MR. NEUMAN: All right. Bonnie if could pull up

Jarosz 11, please.

BY MR. NEUMAN:

Q. There's a lot of information. It's a very busy slide, but could you explain at a very high level what the information is on this chart that supports the graph that we just -- the bar chart that we just looked at.

A. This busy but exciting chart shows the Wilner model and the results and then adjustments over time, so you'll see under Wilner values, he started with the gross profits budget of the $166.6 million. He made his adjustments, subtracted actuals and at the very bottom of that column you see the damages number of $75.6 million.

If instead you use that same model structure and just put in the LPs or last projected models, you see the numbers change quite dramatically over time, and the bottom line numbers you see in that last row are precisely the ones that I charted in the previous demonstrative slide.

Q. And are all of the assumptions the same in what you've done here, other than the budget number, the same that Dr. Wilner used?

A. Yes, exactly the same.

Q. So if we could go back a slide to 10, is this further evidence of the sensitivity that you were talking about earlier, the sensitivity of the damages number to shifts in budget and accuracy?

A. Yes, and it's also all occurring in a period before the alleged infringing sale even occurred.

Q. Now, did you hear Dr. Wilner say that it's -- in his opinion, it's not appropriate to use the fall 2014 budget, anything after the fall 2014 budget --

THE COURT: Twenty what? What year are you saying?

BY MR. NEUMAN:

Q. Did you hear Dr. Wilner testify that it is not appropriate in his opinion to use any of the subsequent monthly forecasts to calculate damages, any of the forecasts that were prepared after the fall 2013 annual budget for 2014 was prepared?

A. Yes, I heard that.

Q. And do you -- and why did he say that in his view it was not appropriate to use any of those later forecasts?

A. I think he said there was evidence of Willowood's likely entry into the business that started to seep in to Syngenta's thought processes beginning in 2014 and then going onward.

Q. Do you agree with Dr. Wilner that that information is a sufficient basis to say we should not use monthly LPs that were prepared after the fall of 2013?

A. No. He didn't present any evidence that, in fact, that was the case, that evidence of Willowood's likely entry was first known in 2014. Moreover, he didn't have an explanation for why the gross profits projections or forecasts kept going down month to month because he didn't have any particular new

information that was -- that he pointed to that seeped in that change from January to February, and then some new information from February to March, and new information from April to May. It continued to fall, but he didn't point to particular evidence that was confirming that Syngenta was now only learning of Willowood and its knowledge was changing every single month.

Q. Well, did you hear the testimony presented by some of Syngenta's fact witnesses about what they were hearing, what they say they were hearing in the last month of 2013 and early 2014 on that score?

A. I heard evidence on that, yes; and, again, I didn't see any confirmation, but I heard they were hearing about it, but I didn't hear testimony about when they first heard about it or thought about Willowood.

Q. And how would you -- how would you describe the quality and quantity of that information in terms of a basis to not use those later budget forecasts?

A. If I were putting together a model that derived these kind of numbers, I would want to investigate that a little bit more to see what that evidence was, how much of it there was, and how reliable that evidence was, and I didn't see that.

Q. Was there any evidence presented as to how the information that was obtained by Syngenta translated into specific reductions in their budget forecast month to month?

A. No. I didn't hear any on that.
Q. Now, do you believe that there is a more plausible explanation for why these monthly LPs were decreasing generally month over month after preparation of the fall 2013 annual budget?
A. Yes. The business for the farmers was becoming very difficult in early 2014, and that had nothing to do with Willowood.
Q. And in that regard, what -- have you seen evidence as to what Syngenta expected with respect to that factor, when it prepared its budget in late 2013?
A. Yes. In its budget, and the materials around it, it said is suspected strong commodity prices, that they would continue strong and, in fact, they were not right. Now, I should explain the commodity prices, just so we're in agreement.

Farmers sell crop and they generate commodity prices, in other words, something is paid per bushel for wheat or corn or soybean. So when we're talking about commodity prices, it's the money that comes into the farmers. When we're talking about azoxystrobin, that's a cost. They need to put that on their crops to ultimately sell their crops.

So the difference for a farmer between what it can realize in sales and what it costs to run a farm, is its margin. And what we see here is what it realizes through the commodity prices, came down dramatically over time, and so that

really pinched farmers and their ability to incur costs, and so when they think about buying more azoxystrobin, they realize the margins, or the profits, have really been squeezed and they think long and hard about whether they want to pay Syngenta prices for the fungicides.

MR. NEUMAN: Bonnie, could you put up Slide 12.

BY MR. NEUMAN:

Q. Mr. Jarosz, does this slide depict any of the trends that you were talking about in terms of commodity pricing?

A. It does.

Q. Could you explain to the jury what this slide shows.

A. That blue line I tracked what the corn prices were. That's one of the commodity prices. That's what farmers realize. They sell corn, and they realize a price on that corn. You'll see that it was fairly steady in the first part of 2014, and then suddenly the market changed dramatically, so Syngenta, predicted strong commodity prices but, in fact, that wasn't right. You'll see it fell from over an $135 per bushel, down to less than $105, so things really fell.

Not surprisingly, there was --

THE COURT: Wait a minute. What?

BY MR. NEUMAN:

Q. Mr. Jarosz, I'm sorry, you may have misspoken. Which axis is the price per bushel on?

A. It's on the right axis. Oh, I'm sorry. You're absolutely

right. I misspoke. It was $4.70 per bushel. Thank you, Your Honor.

THE COURT: All right. I'm easily confused sometimes. Go ahead.

THE WITNESS: And I'm the one who said I get exited about data so I --

THE COURT: Go ahead. What's your question?

THE WITNESS: $4.70 per bushel, it fell down to less than $3.60 per bushel. And shortly thereafter, the azoxystrobin prices fall in a similar kind of pattern. The azoxystrobin prices realized by Syngenta fall from the prices that I gave just a moment ago; from about $135 per gallon down to about $105 per gallon.

So corn prices were very much impacting and, in fact, what we economists call a leading indicator for azoxystrobin prices, when corn prices fell, azoxystrobin was less attractive and those prices had to fall.

BY MR. NEUMAN:

Q. And when did azoxystrobin -- just to be clear, the blue line is the decline in corn prices, and when did the dramatic drop occur that you're referring to?

A. Between March and August of 2014.

Q. And when did Syngenta then react with corresponding drop in its price of azoxystrobin?

A. About six months later, at the end of 2014.

Q. Now, you testified earlier that for years after 2014, Dr. Wilner used actuals versus his adjusted forecast, the forecast he thought that Syngenta should have made, right?

A. Yes, that's right.

Q. All right. Is that actually true for how he calculated 15 plus million dollars in damages for the year 2017?

A. No. For 2017, he didn't have any data, and of course not, he did his report in 2016 so there were no 2017 data. So he said the forecast for 2017 will be what the LP was for January of 2016, and he said the actual for 2017 will be the LP for July of 2016. So he picked up observations from 2016 and put those into 2017 to come up with his damages estimate.

Q. And at that point in time, in mid-2016, did he have any actual sales data for 2017?

A. No. In fact, he didn't even have actual sales data for 2016.

Q. Has Dr. Wilner attempted to test the accuracy of Syngenta's azoxystrobin budget forecasting?

A. Not to my knowledge.

Q. Now, please refer to Wilner -- Dr. Wilner's demonstrative Exhibit 52.

Bonnie, if you could bring that up.

Do you recall some testimony by Dr. Wilner about his use of this chart, as you can see in the heading, validation of calculations?

A. Yes, I think he did that near the end of his testimony.
Q. And what do you understand Dr. Wilner to have said about why this chart validates his calculations?
A. Well, he said, look at the difference between the yellow line where I have an arrow, and the red line where I have an arrow, and those are pretty close. Therefore, the company must be pretty good at budgeting.
Q. Do you agree --
A. And, in fact --
Q. I'm sorry, go ahead.
A. In fact, what you see in 2015 is his estimate of what the budget should have been, and if you look in other years, it's not very close at all. So if you look at 2015, versus 2016, the yellow versus the red, that's off by quite a bit.

If you look at 2016 versus 2017, the yellow versus the red is off by quite a bit, so he picked one year where things looked close, and they are close, but remember, he created 2015, so he created it to look close.
Q. Sir, could you please sum up your criticisms of Dr. Wilner's use of the azoxystrobin sales forecasting as a foundation for his lost profits analysis?
A. Yes. He relied on budgets which have been shown to be inaccurate. They have been off for quite a number of years. He relied on a budget that was done before the first alleged infringing sale in July of 2014, and he didn't go back to test

to see how well the azoxystrobin budget, in fact, predicts actual performance by looking at pre-2009 projections, for instance, or looking to see how the process is undertaken to see whether his one off explanations are enough or whether, in fact, Syngenta's budgeting is imprecise.

Q. Let's turn to the second main critique you have of Dr. Wilner's lost profits analysis, which was his use of Syngenta's mesotrione budgeting as a benchmark to adjust the azoxystrobin budgeting. Could you remind us of how Dr. Wilner uses those forecasts, the mesotrione forecasts in his analysis.

A. Yes. He looked at the variation from mesotrione actual versus budget and said that adjusts for all the other things going on in the marketplace other than Willowood's infringement, so let me adjust the azoxystrobin forecasts for that difference, because that will pick up impacts that I need to pick up.

Q. Impacts other than Willowood?

A. Other than Willowood, yes.

Q. So for Dr. Wilner's analysis to be reliable, would it also be important for Syngenta's forecasting of mesotrione sales to be accurate just like for its forecast of azoxystrobin sales?

A. Absolutely, because the way it works is -- the way he uses it is he said if the mesotrione actual is 80 percent of the mesotrione budget, then we should expect that the azoxystrobin actual would be 80 percent of the azoxystrobin budget. So the

accuracy of the mesotrione budget is critical because that defines whether it's 80 percent off or something different.

Q. Was Syngenta's annual forecast budgeting of mesotrione sales accurate?

A. No. They had similar difficulties in forecasting associated with mesotrione.

Q. Did you prepare a slide that demonstrates that?

A. Yes.

Q. Bonnie, if you could pull up Jarosz 13. Does this slide show what you were just describing about their budget forecasting for mesotrione?

A. Yes.

Q. What does it show?

A. This looks at just mesotrione, as opposed to what I looked at before, which was just azoxystrobin, and you'll see there's quite a bit of variation between budget and actual for mesotrione. You'll see in 2012 and 2013 before anything happened that the budget was off by 23.8 to 29 percent. So that's quite a bit of variation just in the mesotrione, and it's in a different direction from what we saw the azoxystrobin problems, and even in 2014 it was off by 15.4 percent. So this is a difficult business to forecast, and the numbers here show that difficulty.

Q. Now, Dr. Wilner -- thank you, Bonnie.

Now, Dr. Wilner also says that mesotrione is so

similar to azoxystrobin itself that it's appropriate to use mesotrione as a benchmark that accounts for factors other than Willowood. Do you agree that mesotrione is sufficiently accurate as a benchmark?

A. No, it's not sufficiently accurate. There are fundamental differences between mesotrione and azoxystrobin that would suggest that their performance wouldn't necessarily move in the same direction.

Q. Now, Dr. Wilner says that azoxystrobin and mesotrione are sufficiently similar, in part, because Syngenta lost exclusive right over -- rights over both of those molecules at about the same time in 2014, and, therefore, both would start to face generic competition at roughly the same time. Do you agree with that?

A. No. It's factually not quite accurate because though data exclusivity was lost from mesotrione in 2014, there's been testimony that about 88 percent of mesotrione is used in mixtures that are covered by other patents. So there was still patent coverage that was standing in the way of mesotrione succeeding in the marketplace. That was not the case for azoxystrobin.

Q. Did you also hear testimony that in 2014 BASF's patent for its strobilurin product, its equivalent to azoxystrobin, came off patent in 2015?

A. Yes, I did.

Q. And do you recall testimony that in anticipation of that event, BASF increased the amount significantly of its strobilurin product that it would sell in the market in 2015?
A. Yes, and that exerted price pressure.
Q. On which product?
A. On the azoxystrobin product.
Q. And would one expect that that action, that event, would exert a similar downward price pressure on mesotrione?
A. No.
Q. Now, mesotrione is a herbicide, correct?
A. It is.
Q. And azoxystrobin is a fungicide?
A. Yes.
Q. Would that difference matter in terms of farmers purchasing decisions and farm economics?
A. Absolutely. There's been a lot of testimony on that in many documents. The mesotrione, being a herbicide, deals with weeds. Azoxystrobin, being a fungicide, deals with fungal disease or diseases. They treat very different things, and the importance of treating weeds is different from the importance of treating disease.
Q. And how does that affect demand and predictability for those two products?
A. Mr. Heinze talked about this issue, as did other witnesses here. Weeds are always a problem. Farmers always have to

address that problem, and so there's not nearly as much elasticity or variation in prices associated with herbicides because farmers need to buy the product. Fungicides that treat disease, that's less substantial of a problem. And so in tough times, farmers can and do cut their expenditures of fungicides and azoxystrobin, in particular, because they don't have to treat diseases in the same way that they have to treat the weed problems.

Q. And you said you heard that sort of testimony from Mr. Heinze. Do you have any other information in evidence that you have reviewed in this case that indicates that that's so?

A. There are many Syngenta presentations that talk about that precise topic.

Q. Have you taken a look at how mesotrione actually performed year to year -- mesotrione sales actually performed year to year compared to azoxystrobin sales?

A. Yes. In particular, I looked to see the performance versus budget for both of the products, and I focused on gross profits.

Q. Could you please take a look at Jarosz 14. Bonnie, could you bring up Jarosz 14. Can you explain what this slide shows, Mr. Jarosz.

A. Yes, this shows that mesotrione and azoxystrobin react very differently in the marketplace, the actual performance versus the budget performance. So in 2012, for instance,

azoxystrobin was within 3 percent of the budget; yet, mesotrione was 29 percent. So it was wildly off. In the next year, 2013, mesotrione was 24 percent too high; yet, azoxystrobin was 18 percent too low.

And so you'll see two of the four years, 2013 and 2015, they move in opposite directions. In other words, budget is less than actual for one, but more than actual for the other; and in neither -- in none of the years do they track each other very closely. In other words, azoxystrobin variations from budget are very different from mesotrione variations from budget. So for Dr. Wilner to use the mesotrione budget variance as an estimator for azoxystrobin seems to conflict with how they actually perform.

Q. Now, this chart shows a comparison of the actual sales results for these two products. Did you also look at how, if at all, Syngenta's budgeting decision-making indicates differences between how they budget for mesotrione as opposed to azoxystrobin?

A. Yes, I did.

MR. NEUMAN: Bonnie, could you please pull up slide 15. I'm sorry, 16. Beg your pardon. May I have a moment, Your Honor?

THE COURT: Okay.

MR. NEUMAN: How about 15.

BY MR. NEUMAN:

Q. What does this slide show?

A. I attempted to see if mesotrione and azoxystrobin are impacted in the same way in the marketplace. Do they track each other in Syngenta's eyes? And what I saw is, that they do not. What I tracked here is azoxystrobin's budget versus its actual performance from the previous year, and I did that for mesotrione as well.

So if they move together, reacted to the same kinds of things in the same ways, I would have expected those bars to be pretty similar to each other, but they're not. Even before any alleged infringement occurs, you'll see in 2013 the company put the azoxystrobin forecast 14 percent above the actual performance from the prior year, but mesotrione was held constant. Similarly, for 2014. Azoxystrobin was put 16 percent up, but mesotrione was only 1 percent up. And similarly in the later years.

So you'll see that Syngenta views them as reacting to different dynamics in the marketplace. They are not sufficiently comparable.

Q. You've heard reference to the phrase "untreated acres"?

A. Yes I have.

Q. Now, does that factor affect the demand for herbicides and fungicides differently?

A. Yes, absolutely, and Syngenta documents talk about untreated acres quite a bit. In fact, for azoxystrobin they

call "untreated acres" the biggest competitor.

Q. And what's the implication of that for sales of azoxystrobin and the potential effect of generic competition?

A. It goes back to what I discussed a few moments ago. When times are tough, farmers can and do decide not to treat their crops with azoxystrobin or any fungicide. And when the prices are too high, they decide not to treat their crops with azoxystrobin. That's not the case with -- not as much the case with regard to herbicides. Farmers treat herbicides. They need to because weeds are a problem year in and year out. They don't always treat fungicides.

So, by way of example, from 2013 to 2014, when the commodity prices are really falling down, mesotrione sales go up; yet, azoxystrobin sales go down. And I would expect that, because when times are tough or prices or too high, farmers won't spend for azoxystrobin or other fungicides.

Q. Could you please put up Jarosz Slide 16.

Does this slide relate to what you were just talking about, Mr. Jarosz?

A. It is.

Q. And what does it show?

A. I show, again, two axes on the left-hand side. I show azoxystrobin -- I'm sorry. On the left-hand side, I show net farm income. That's the blue line. And, again, as I described, as I showed with my hands before, net farm income is

the difference between the prices that farmers are able to obtain and the cost that they incur. When things are good, that's a big spread. But you'll see over time, farm income came down, it was pinched; and as a result, not surprisingly, azoxystrobin sales fall. That's what's shown in the orange line, that -- associated with the big drop in farm income from 2003 onward, azoxystrobin prices fell as well, and that's regardless of whether Willowood is in the marketplace or not.

Q. Thank you, Bonnie.

Let's talk about your third main critique of Dr. Wilner's lost profits analysis, which, as I understood it, was his assumption that other generics were insignificant compared to Willowood in the market place. Is that a fair summary of your critique?

A. Yes, I think so.

Q. Now, who was the first generic azoxystrobin producer distributor into the market?

A. Cheminova.

Q. I beg your pardon?

A. Cheminova.

Q. And in 2014 and 2015 in terms of azoxy sales, how big were Cheminova's -- withdrawn. Was there another generic market entrant in 2014?

A. Well, there was Willowood and Albaugh. So there were three entrants in 2014.

Q. And in 2014 and 2014 (sic), how big were Cheminova and Albaugh sales compared to Willowood?

A. I assume you're talking about 2014 and 2015?

Q. Fifteen, yes. I beg your pardon.

A. Collectively, they're quite small. They are a small sliver of Syngenta sales. But the sum of Cheminova and Albaugh is as large as Willowood, and I think I have a demonstrative slide on that.

Q. Bonnie, could you put up Jarosz 17.

So just very quickly, Mr. Jarosz, just go through this slide for the jury.

A. I plotted there the shares associated with azoxystrobin technical. You'll see that Syngenta and its partners comprise about 91 percent of business. Willowood has about 4 1/2 percent. Cheminova and Albaugh for those two years have about 2 percent each. So they sum up to having a larger presence in the business in those two years than Willowood, although all of them are fairly small.

Q. So did it make sense to you to simply write off the relative significance of Albaugh and Cheminova in relation to Willowood?

A. No. They're just as significant; and if Willowood were gone, not in the market, I have a hard time imagining Cheminova and Albaugh wouldn't be more aggressive and more successful, because there would be a market opportunity for them.

Q. What did Dr. Wilner assume on that point?
A. In his base case, he assumed that Cheminova and Albaugh had no impact on Syngenta, that all of the impact came from Willowood. In essence, he wrote that Albaugh and Cheminova in his base case would probably have left the market if Willowood had left the market.
Q. So in a but-for world, if those generics had acted more aggressively and made the sales that Willowood would have otherwise made, what does that say about the damages caused by Willowood's alleged early market entry?
A. That there would be no damages because Albaugh and Cheminova would fill in the void, and one would expect that, if Willowood were gone, that those companies would come in and continue to compete aggressively and have the same impact on Syngenta that the three of them collectively had.
Q. And I'm sorry. I may have spoken some jargon. I asked you in the but-for world. Could you explain what the but-for world is?
A. A world in which there's no infringing activity. In Dr. Wilner's mind, that's a world in which Willowood does not participate in this business.
Q. You're familiar with Syngenta's brand ladder that's been discussed in this case by several witnesses?
A. Yes, I am.
Q. Bonnie, could you put up Dr. Wilner's slide 12.

Now we've all seen this brand ladder several times. How do you understand Dr. Wilner to have used this brand ladder?

A. In essence, he said, any impact for any rung on the ladder impacts all of the other rungs. So even though Willowood competes directly with Quadris and Quilt Xcel, the impacts of that competition would run all up and down the ladder so that the entire portfolio of Syngenta azoxystrobin products would be impacted.

Q. Do you agree with how Dr. Wilner used the brand ladder to calculate damages?

A. No, I have a conceptual problem and a practical problem.

Q. Could you explain, please?

A. The conceptual problem is -- I think he talked about it, and maybe Mr. Cecil talked about it. The idea of a brand ladder or brand pyramid was first introduced by Alfred Sloan a hundred years ago in dealing with GM.

THE COURT: In dealing with what?

THE WITNESS: GM, General Motors.

THE COURT: All right.

THE WITNESS: And he built out this concept whereby Oldsmobile and Buick and Chevrolet wouldn't compete with one another because those were all GM brands but would inhabit slightly different marketplaces, or segments. He wanted to foster the idea that the company shouldn't be cannibalizing, or

taking sales away from itself, but should be developing new marketplaces and going out and competing differently.

And so, specifically, what the brand ladder concept says is, let's segment our different solutions to different segments of the business so that we don't steal from one another. As a result, we also won't feed off one another. We're going to different parts of the market. So, specifically, as set up, the brand ladder does not suggest that all these rungs move together, but there are simply different rungs for different segments.

Q. That's your conceptual problem?

A. Yes.

Q. What's the practical problem?

A. The practical problem is that I asked myself, well, do the Syngenta products actually move up? Do the rungs move together? When there are price changes for Quadris and Quilt Xcel, historically, has it been the case that there have been similar price changes for the other products on the brand ladder? And I created a demonstrative that reflected my results.

MR. NEUMAN: Bonnie, could you please pull up Jarosz 18?

BY MR. NEUMAN:

Q. Is this demonstrative that you were referring to?

A. Yes.

Q. Could you explain what this demonstrative shows?

A. What I have charted in the red bars is price changes for Quilt Xcel and Quadris from the previous year. What I've charted in the other colors is other products on this so-called brand ladder.

I would have expected, if you think the rungs all move together, that Quilt Xcel and Quadris, which is what Willowood has been competing with, that they would move together, or roughly together, and that so would the other products. But, in fact, you can see it's all over the place.

So, in 2014, for instance, Quilt Xcel and Quadris prices go down, yet Quadris Top SB abound, Quadris Top and Avaris all go up. The rungs aren't moving together. Similarly, with regard to the 2016 June year-to-date, in fact, Quadris and Quilt Xcel move in opposite directions. They don't even move together when they're on the same rung. And the other products, some go up, some go down.

So it doesn't appear as if these rungs are moving together. They -- it appears to be the case that each product is responding to the specifics of the marketplace that that that product fixes.

Q. Thank you, Mr. Jarosz. You can take this slide down now, Bonnie.

Now, did you hear Dr. Wilner offer up an alternative damages number of roughly $34 million in the event that,

despite his opinion, Cheminova were deemed to be -- have an effect on the market?

A. Yes, I did.

Q. Do you have an opinion as to that number?

A. I do.

Q. What is it?

A. It suffers from the same flaws as the original number does, the problems in forecasting, the problems with using mesotrione, the problems with generic competition still being there. In particular, on this last point, he says, Albaugh and Cheminova and the other generics would, in his calculation, only be as strong as they were historically.

Well, that overlooks the fact that if Willowood is gone, those companies are likely to be aggressive and fill the void that's been missing with -- coming from generic competition. Why would Cheminova and Albaugh just give this market away when they had a good, strong presence? I'd expect it's more reasonable that they would continue to fight, and that continued fight would have the same impacts on Syngenta as historical, because remember, Syngenta is responding to generic competition throughout its documents.

Q. Thank you, Mr. Jarosz. I'd like to talk to you now about your reasonable royalty calculations.

THE COURT: I think, before we do that, let's take our morning break. All right. Ladies and gentlemen, I'll

excuse you for 15 minutes. Please don't talk about the case among yourselves or form any opinion. Avoid contact with the lawyers, parties, or witnesses, and come back in 15 minutes. Leave your notes. The jury is excused.

(At 11:00 a.m., jury excused.)

THE COURT: Okay. So I want to return to the '138 patent and the testimony that was on the -- we talked about this before the jury came in this morning in the context of Dr. Wilner's deposition testimony about what Dr. Whitton told him. When I saw this slide, No. 6, in the Defendant's demonstrative here, it just sort of hit me in the face again, and I don't like to overrule myself, but I just want to revisit this, because I don't understand how this witness can testify about a reasonable royalty based on available non-infringing options, when there's no evidence of non-infringing options.

So, can you explain that to me?

MR. NEUMAN: I can explain that that is an error and that should have come out of that slide.

THE COURT: Okay.

MR. NEUMAN: It should just -- it should not say that.

THE COURT: It should not say that?

MR. NEUMAN: That's correct.

THE COURT: All right. Okay.

MR. SANTHANAM: Well, Your Honor, it's not just with

respect to the '138, but also the '761. So, in the slide deck before you, Slides 19, 20, 21, 22, and 23, all of these are based on these bare numbers of 40 percent, 50 percent that have no foundation in the record. And if -- Slide 22 also has a deposition excerpt, and that's with respect to the '761 patent.

THE COURT: Okay. Well, I'm more concerned about the '138 patent. I mean, I don't -- Slide 21 also references -- no, that's the '761 patent. Let me look. Slide 19 also references incremental costs of non-infringing alternative to the '138 patent.

MR. NEUMAN: And the witness can explain that he is not -- he has no opinion as to whether there is a non-infringing alternative, that what he means by that is that based on what he has heard in a hypothetical negotiation, Syngenta would be of that view.

THE COURT: Would be of what view?

MR. NEUMAN: That there is -- that there is another alternative because they have testified that to do it without using that patent would cost an extra 50 percent.

MR. SANTHANAM: Your Honor, there's been no foundation of that at all.

THE COURT: I'm having trouble understanding how this is helpful to the jury when the jury has no evidence of that. I mean, the jury has to calculate the -- set the reasonable royalty.

MR. NEUMAN: Yes.

THE COURT: And they have to have a basis for that. So --

MR. NEUMAN: And Dr. Wilner will testify that --

THE COURT: Doctor who? Who will testify?

MR. NEUMAN: I mean, Mr. Jarosz will testify that based upon the information provided by Dr. Whitton to Dr. Wilner, that, in a hypothetical negotiation, Syngenta would take the position that there's a 50 percent mark-up on the use of something other than the '138 patent. It provides the starting point for the hypothetical negotiation.

THE COURT: Okay. So you're using different words, because what's on these -- what's on the slide says, non-infringing alternative.

MR. NEUMAN: That's correct.

THE COURT: But there's no evidence of a non-infringing alternative for the jury to take into account.

MR. NEUMAN: And doctor -- and Mr. Jarosz will not opine as to the existence of a non-infringing alternative.

THE COURT: Okay. But, if there's no evidence of a non-infringing alternative, how can he use that as the basis for his calculations?

MR. NEUMAN: Because there is information about what Syngenta believes the cost would be -- incremental costs would be to not use the '138 patent. He's not opining that there is

an alternative available. He's using that as the basis for where Syngenta would start in the negotiation.

THE COURT: Okay. So --

MR. NEUMAN: He's agnostic on whether or not there actually is an available alternative.

THE COURT: Okay. So, I'm sorry. Sometimes, I'm just a little slow about these things. You are not going to be contending that there was a non-infringing alternative available for the '138 patent when one is evaluating lost profits?

MR. NEUMAN: Correct.

THE COURT: Okay. Thank you for helping me understand that.

MR. SANTHANAM: Well, Your Honor, the non-infringing alternative is the basis for his reasonable royalty as well. The number of 30 or 40 percent, the number of 10 or 15 or 20 percent, all of those numbers, those percentages, there's no foundation for it in the record.

They had the opportunity, if they wanted, to ask Dr. Whitton. They had the opportunity to ask Dr. Wilner. And what they're essentially trying to do is put forth facts, underlying facts under Rule 703 for which there's no basis in the record. And, if anything, it would confuse the jury under Rule 703. And under that standard, the prejudicial value far outweighs the probative value, and it should be the opposite

under Rule 703.

THE COURT: Anything else you want to say?

MR. NEUMAN: There are many factors that affect a hypothetical negotiation. This is one of them.

THE COURT: All right. Let me think about it a little bit over the break. So we will take a seven-minute recess.

(At 11:06 a.m., break taken.)

(At 11:21 a.m., break concluded.)

THE COURT: Okay. Well, I tried to figure this out again and remembered what I thought about it at the time. I'm really a little confused here. Dr. -- what Dr. Whitton said to Dr. Wilner is an admission, so it's clearly admissible, if it were ever offered, but, of course, it's not in evidence yet. We don't have any of that. And it can't come in through this witness because he didn't hear the admission.

So, you know, Rule 703 if it -- talks about if it is inadmissible. Well, I mean, that doesn't exactly cover this situation. It's more of a facts-not-in-evidence argument, as I understand it from Syngenta. But there's lots of underlying facts in this case about these budgets and otherwise, and it just seems to me the best thing to do is to let the jury decide.

And it's fine for this witness to say that he used -- he used these percentages or numbers based on his

understanding of what Dr. Whitton told Dr. Wilner, but we're not going to go into the specifics of those statements because they're not in evidence. I mean -- and you haven't offered them into evidence. So I'm going let him testify about it, but it's not a workaround to get that into evidence substantively, because it doesn't qualify. He can't testify about what Dr. Wilner was told by Dr. Whitton because he doesn't know.

So he can testify about his opinion, and he can explain that he based it on what he read in Dr. Wilner's deposition about what Dr. Whitton said, but he just can't repeat the specifics. Have I said that -- I tried to say it two or three different ways. I hope I said them all consistently.

MR. NEUMAN: I think so, Your Honor.

THE COURT: All right. Bring the jury in.

MR. SANTHANAM: Your Honor, momentarily?

THE COURT: Yes.

MR. SANTHANAM: We did have one issue. Last night, we had -- they had exchanged the demonstrative slides. We had objection to one of the slides which had Syngenta on it -- a reference to Mr. Jarosz having worked previously with Syngenta. We understood from counsel for Willowood right before testimony started that they were going to remove that slide, but Mr. Jarosz has made a couple of references to his prior work for Syngenta, and we would ask that he not be allowed to

continue to use that under Rule 404(3) and 404(a).

THE COURT: I assume there's not going to be any more testimony about it.

MR. NEUMAN: There will no more testimony about it. The slide actually had more information --

THE COURT: All right. Come on in.

(Jury present at 11:26 a.m.)

THE COURT: Okay. I believe we are ready to continue with the direct examination.

MR. NEUMAN: Thank you, Your Honor.

THE COURT: Everybody is seated. You can go ahead.

BY MR. NEUMAN:

Q. Mr. Jarosz, let's talk about reasonable royalty. Has Dr. Wilner offered any opinion about a reasonable royalty damage number in this case?

A. No, he has not.

Q. Have you calculated reasonable royalties?

A. Yes, I have.

Q. Can you describe for the jury generally what the approach would be to determine reasonable royalties?

A. As I said earlier, a reasonable royalty can be thought of as a license fee that should be paid for use of certain patent rights. The way we typically determine what that license fee or reasonable royalty rate or damages should be, is we use something called a hypothetical negotiation of construct --

THE COURT: I'm actually having a little trouble hearing you. I don't know if the mic is not working quite well, or if you just lowered your voice. So if you could speak up a little bit.

THE WITNESS: Okay. Would you like me to repeat --

THE COURT: No, no, go ahead.

THE WITNESS: What's used is this hypothetical negotiation construct. We assume that the two parties would have sat down at a bargaining table; and instead of Willowood presumably infringing the patents, we try to determine what should have been the outcome of a negotiation between Syngenta and Willowood. So what would a license have looked like, and what would have been the terms of the payment under that license?

BY MR. NEUMAN:

Q. And have you done that assessment in this case?

A. Yes, I have, and I've done that by assuming, as we do, that at this bargaining table the patent rights are assumed to be valid and infringed. The jury may not find that; but for this analysis, I assume that's the case. And what we're trying to figure out through this negotiation is what is the value of the patented inventions and only the patented inventions and how much should be paid for that? And a very good way to determine the value of a patented invention is to find out how much it would cost to do something that's not infringing, but

still accomplishes the same thing. So what's the cost of an alternative, and maybe that differential is a fair reasonable royalty rate.

Q. And could you tell the jury again what you concluded was a fair and reasonable royalty for the compound patents.

A. That is $0, because -- or nominal amount. Ms. Kay talked about this, as did Mr. Heinze, that instead of infringing the compound patents by importing this 5 kilograms of azoxystrobin, the company simply could have done the testing overseas and submitted it to the EPA, and nothing would have been lost in translation. In other words, the EPA would have approved at the same time. The product would have been rolled out at the same time. So there was -- the only cost of doing some alternative is doing the testing overseas, and Ms. Kay said that would be no higher than about $20,000. So it's a nominal amount for the compound patents.

Q. And what was your royalty calculation for alleged infringement of the '138 patent?

A. I've laid that out in a demonstrative slide. Do you want me to tell you what that number is?

Q. Yes, please.

A. That ultimate number is $1.4 million.

Q. And can you describe to the jury at a high level how you determine that number?

A. Yes.

Q. Please do.

A. Dr. Wilner spoke with Dr. Whitton -- Dr. Whitton is at Syngenta, and Dr. Wilner was deposed on this topic, so I read his deposition testimony. And Dr. Wilner said he asked Dr. Whitton what it would cost to do something different than the '138 but still accomplish the same purpose, and he said -- Dr. Whitton said to Dr. Wilner, as Dr. Wilner testified, that using Scheme II, which is laid out in the patent --

MR. SANTHANAM: Your Honor, we're going to object to this.

THE COURT: Sustained. You need to ask your questions a different way, because I believe I said this couldn't come in that way.

MR. NEUMAN: I understand.

BY MR. NEUMAN:

Q. Mr. Jarosz, can you just describe generally the steps you went through to calculate the royalty number without talking about specifics of what Mr. -- of what Dr. Whitton told Dr. Wilner.

A. Sure. I sought to determine how much the azoxystrobin technical cost, what the costs might be if an alternative route was chosen. Then I did a Georgia-Pacific analysis. It's a very famous court case in patent litigation where I looked at various factors that would impact a hypothetical negotiation. Those factors said the number should be somewhere in the middle

of the range of -- under consideration. Considering what the cost savings are, I took the very high end of range, which is conservative, I then applied that to the number of pounds of technical that were imported, and that gave me my reasonable royalty number.

Q. And that number was?

A. $1.4 million. You're talking about for the '138?

Q. Yes, thank you. And did you do a similar calculation and use a similar approach to calculate a royalty -- reasonable royalty for the alleged infringement of '761?

A. Yes, I did the exact same approach. The coverage of the period at issue is a little bit longer, so I had to adjust for that. The advantages are a little bit lower. The end result is a royalty rate that I obtained using the same process, and that resulted in royalty damages for the '761 of $900,000.

Q. Is that in addition to the royalty that you calculated for the '138 in the event that the jury finds infringement of both?

A. Yes, those two numbers can be added together.

THE COURT: Are you okay?

JUROR: I need a tissue. I'm sorry.

THE COURT: Just a second. No problem. Fall allergies for all of us. Do you need the last question and answer repeated? Yes, can you just -- let's see.

MR. NEUMAN: Do you me to --

THE COURT: Yes, if you could ask it again.

BY MR. NEUMAN:

Q. Is the $900,000 royalty for alleged infringement of the '761 patent in addition to the $1.4 million number that you calculated for the '138 patent in the event that both are found to have been infringed?

A. Yes, those are additive.

MR. NEUMAN: No further questions, Your Honor.

THE COURT: All right. Questions for Syngenta.

MR. SANTHANAM: Yes, Your Honor.

CROSS-EXAMINATION

BY MR. SANTHANAM:

Q. Good morning, Mr. Jarosz.

A. Good morning.

Q. Now, you spoke just a moment ago about reasonable royalties. When you're calculating damages in a patent infringement case, and you've said that you've done this before, the damages are what are supposed to be adequate to compensate a patent holder such as Syngenta for the alleged infringement, is that right?

A. Yes.

Q. And the reasonable royalty is the bare minimum, isn't that right?

A. Yes.

Q. And so -- and in some instances, you would agree with me that lost profits is an appropriate measure of damages,

correct?
A. Yes, I agree with you.
Q. And if lost profits are established, if it is established that Syngenta lost profits as result of Willowood's infringement, then those are the damages, not the reasonable royalties, isn't that right?
A. Correct. If they're properly established, yes.
Q. Now, I'd like to talk a little bit about the analysis -- and before we go on, the idea of lost profits is to put the patent holder, Syngenta, back in the position it would have been until a but-for world where Willowood had not infringed, is that right?
A. Yes. I agree with that.
Q. Now, Mr. Jarosz, I'd like to talk a little bit about the -- some of the slides and the demonstratives that you put up. I'd first like to start with Slide 7 of your -- 17, excuse me.

THE COURT: I think -- okay?

MR. SANTHANAM: Yes.

BY MR. SANTHANAM:
Q. And Mr. Jarosz, you mentioned, when you were discussing this slide, that Willowood's share of azoxystrobin -- and these are of imports, is that right?
A. Yes.
Q. That Willowood's share of azoxystrobin imports -- I

believe the exact words you used was, A small sliver of the overall pie of azoxystrobin imports. Is that right?
A. Yes, I think that's right.
Q. And when we look at this chart, and you'd agree with me, the vast majority are Syngenta and Syngenta partners is that right?
A. Yes.
Q. Now, assuming that Syngenta's not competing with itself, and we remove the blue from this chart, that leaves the three entities, Willowood, Cheminova, and Albaugh, is that right?
A. If you remove all the blue, it results in the other pies. I'm not sure if you can move all of the other blue, but I'm certainly following you.
Q. Okay. And, if you just look at Willowood, Cheminova, and Albaugh, and if you look -- and you turn that into a pie of those three entities, you'd agree with me that Willowood would be more than 50 percent of that pie, is that right?
A. Yes, for that period. That wouldn't be true if you added 2016, however --
Q. Well --
A. -- I think.
Q. -- Mr. Jarosz, let's take a look at that hypothetical pie. We don't have that in front of you here because you didn't generate that, but let's take a look at that hypothetical pie. One of the components of that would be Albaugh, is that right?

A. Yes, that's right.
Q. Now, you heard testimony -- you said that you were here observing the entire trial, is that right?
A. Yes.
Q. And, surely, you heard testimony about how Albaugh was only in seed care and lawn and garden; that's where their sales were observed, correct?
A. I think I heard that much of their business is in seed care and lawn care. I don't think that was exclusive.
Q. And you understand that Dr. Wilner's analysis, his damages calculations excluded seed care and lawn and garden, correct?
A. Yes.
Q. And let's talk a little bit about Cheminova. You understand that, you know, this chart was for 2014 and 2015?
A. Yes, that's right.
Q. And, in 2014, Cheminova didn't have corn on its EPA-approved label, correct?
A. That's correct. But Syngenta also missed the corn growing season in 2014.
Q. Mr. Jarosz, my question was, Cheminova did not have corn on its EPA registered label in 2014, isn't that right?
A. Yes, I agree with you.
Q. And you heard the testimony of a number of witnesses that if you don't have corn on your label, you can't sell your product for use on corn. Isn't that right?

A. Yes, I agree with that.
Q. And, as for all of 2014, Cheminova could not sell its products on corn, isn't that right?
A. Correct. Neither did Willowood.
Q. Well, Mr. Jarosz, my question was, For all of 2014, Cheminova could not sell its products on corn, isn't that right?
A. Yes. I agree with you.
Q. And, actually, even for a portion of 2015, Willowood -- Cheminova could not sell its products on corn, isn't that right?
A. For a portion, yes.
Q. And at some point in 2015, you heard the testimony of Brad Reichman that was read that Cheminova left the market, isn't that right?
A. What time frame did you put on that? I'm sorry.
Q. In 2015.
A. Cheminova was bought by FMC.
Q. And at that point, the testimony you heard while you were here was that Cheminova got out of the business, isn't that right?
A. As a company, it was bought by FMC.
Q. And they weren't selling azoxystrobin products after that point, correct?
A. Because there was not a separate Cheminova company, that's

right.
Q. Well, let's talk a little bit more about Cheminova and Albaugh. You indicated, Well, if Willowood wasn't in this pie, somehow, Cheminova and Albaugh would fill their shoes. That was your testimony, is that right?
A. I didn't use those exact words, but I agree with the concept. Why would they just sit by and let the market drift away?
Q. Well, Mr. Jarosz, you haven't actually -- well, you're not a chemist, correct?
A. Correct, I am not.
Q. You haven't actually tested Cheminova's products to determine whether those products are infringing, correct?
A. Correct, and no one would want me to do that.
Q. And you haven't actually tested Albaugh's products to determine if they're infringing, correct?
A. Correct, and I'm not qualified to do that.
Q. You're not aware of any testing that Willowood's done to establish whether these products are non-infringing, correct?
A. No, I'm not aware of any.
Q. And you've heard no testimony at this trial regarding whether Cheminova and Albaugh are non-infringing, isn't that right?
A. I don't think I have. I've also not seen a lawsuit filed against them or a judgment against them for infringing.

Q. My question was different, Mr. Jarosz.

You have not heard any testimony at this trial regarding whether Cheminova or Albaugh are non-infringing?

A. Correct. I still agree with you.

Q. Now, I'd like to turn to Slide -- this was Slide 17. If we could go to Slide 12. Now, this was a slide that you used to say that -- and I believe your opinion was that Syngenta sales varied with corn prices. Is that right?

A. I don't remember the exact words, but certainly, it appears that the trajectory of prices track with a lag in corn prices.

Q. Well, Mr. Jarosz, let's talk about little bit about the axes that you chose. This was a chart that you said you prepared, is that right?

A. Yes.

Q. And on the left axis, you've got numbers that are in dollars per gallon that go from $90 per gallon to $140 per gallon, is that right?

A. Yes.

Q. You didn't put that from zero to 140, did you?

A. I didn't put it from zero to 140, but I did separately do an index where I said January 2014 to 100.

Q. Mr. Jarosz, if you could just answer my question. You did not put it from zero to 140, is that right?

A. Correct, I did not.

Q. And on the right-hand side, you chose to go from $3 to $4.80, is that right?
A. That's right.
Q. You didn't go -- you didn't put that on the same axis as what we have on left here, is that right?
A. Correct. You wouldn't see it, and I didn't need to because I did the index alternative.
Q. If we could go to Slide 16. And, similarly, you have another chart here where you said that azoxystrobin sales followed US farm income, is that right?
A. Yes, the changes followed, yes.
Q. And, Mr. Jarosz, let's take a look at the axes that you chose. This is the chart that you prepared, is that right?
A. Yes, it is.
Q. And on the left-hand side, you go from 90 -- or 50 billion to 130 billion, is that right?
A. Yes.
Q. And on the right-hand side, you go from 170 million to 230 million?
A. Correct.
Q. And the entire axis on the right-hand side, that's about a 60 million range, is that right?
A. Yes, that's right.
Q. That's less than an tenth of an billion, isn't it?
A. That's right.

Q. So if you plotted what you have here in orange on the same axis that you have here on the left, that would be a pretty flat line, wouldn't you say?

A. Correct, but if you index it like I did --

Q. Mr. Jarosz, that was my question.

MR. NEUMAN: May the witness be allowed to explain his answer?

THE COURT: Well, it's a yes or no answer. You can ask him on redirect if you want.

BY MR. SANTHANAM:

Q. So that's a yes, Mr. Jarosz?

A. Still a yes, yes.

Q. Now, I'd like to talk a little bit about Slide 10 -- 11, excuse me, if we can go back to that. This is a chart that you said that you were very excited about. Is that right?

A. Yes, we economists get excited about things like this.

Q. And I believe the opinion that you had was, if Syngenta, instead of picking -- going with Dr. Wilner, instead of using the 2014 budget as a benchmark -- an initial benchmark, and picked one of the later projections, his damages numbers would have been --

THE COURT: Would have what?

BY MR. SANTHANAM:

Q. They would have been lower, is that right?

A. Yes.

Q. And Mr. Jarosz, one of the -- I guess, the observations you're pointing out here is that on the top line here, Slide 11, you're plotting out the gross budgets. You see that?
A. Gross profits budget, yes.
Q. Gross profits budget. And at the bottom there, fourth line down, you have the actual gross profits, do you see that?
A. Yes, I do.
Q. And so, your observation is that if you go into 2014, in April, May, and June, those two numbers, the gross profits budget and the actual gross profits, they're getting closer and closer, is that right?
A. Yes, that's right.
Q. Doesn't that -- and doesn't that indicate, Mr. Jarosz, that Syngenta, once it learned of Willowood's activities in the marketplace, they're actually forecasting -- you know, forecasting what Willowood was going to do pretty well, isn't that right?
A. Their forecasts were improving, but this seems to be tracking corn prices and farm income quite closely.
Q. Well, Mr. Jarosz, their forecasts improved as you went through 2014, is that right?
A. Yes, and one would expect that.
Q. And surely, you, because you were here during trial, you would have heard the testimony of Mr. Andrew Fisher about how he got on a plane in early 2014 to go calm down distributors as

a result of market intelligence, is that right?
A. Yes.
Q. And, surely, you've heard testimony about how he was having to offer discounts to distributors because they were worried about Willowood in the marketplace in early 2014, is that right?
A. I don't recall the precise testimony in that regard. Perhaps you have something to refresh my recollection.
Q. Now, Mr. Jarosz, I'd like to -- if we go to slide -- well, let's talk -- if we can put that away for a second.
You mentioned this concept of elasticity, do you recall that?
A. Yes. I think I mentioned it once, maybe twice, but I did mention it.
Q. And you indicated that, well, farmers are going to be more sensitive to buying fungicides as opposed to herbicides, such as mesotrione. Do you recall that testimony?
A. Yes, generally.
Q. And do you recall hearing testimony from Syngenta witnesses, including Mr. Fisher, that there's something called plant performance that's unique to azoxystrobin?
A. Yes, I recall that.
Q. And, in particular, you understand that Mr. Fisher testified that plant performance is something that allows -- that causes farmers to actually start budgeting fungicide,

specifically, azoxystrobin, isn't that right?
A. Yes. I think it reduces the price elasticity, but it's still very, very high. I saw that throughout the Syngenta documents.
Q. Well, Mr. Fisher testified that it does make it more inelastic, isn't that right?
A. More inelastic, but still very elastic.
Q. My question was, it makes it more inelastic, isn't that right?
A. Yes. As I said, yes, more inelastic, but still very elastic.
Q. Now, Mr. Jarosz, I want to talk a little bit about this concept of reasonable royalties that you've put forth. Now, with respect to the compound patents, you said that Syngenta shouldn't have any reasonable royalties because they -- you know, Willowood could have just moved their activities overseas, is that right?
A. Yes, or, more precisely, a nominal amount based on Ms. Kay's testimony.
Q. Now, Ms. Kay didn't actually provide any information about the specific availabilities of any formulators outside the United States, correct?
A. I think she talked about specific formulators outside the United States. My memory is, of course, not perfect.
Q. She didn't come out with a calendar saying, this

formulator would have had availability, would have dropped everything and taken on Willowood's work in 2013, is that right?

A. Correct, I don't recall seeing that.

Q. And she didn't provide any testimony along those lines about an analytical testing laboratory that would drop everything in 2013 and pick up Willowood's work, is that right?

A. I don't think she pointed to a particular analytical chemistry lab --

Q. She did not?

A. -- as I recall.

Q. She did not, is that right?

THE COURT: Don't talk over him.

BY MR. SANTHANAM:

Q. Mr. Jarosz, you were here when Mr. Heinze testified that Syngenta was aware of the compound patents -- all of the patents in early 2013, isn't that right -- excuse me. Willowood was?

A. Willowood was aware of the compound patents. I think he also said the process patents, but I don't recall that as clearly.

Q. Now, Mr. Jarosz, you also -- were you here when Mr. Heinze testified that he understood that when the 5 kilograms were imported into the United States, he understood that that likely infringed the compound patents, correct?

A. Yes. I think he said, we messed up. I think he acknowledged that.

Q. Well, don't you think that if Mr. Heinze and Willowood knew that importing would infringe -- or likely infringe, and it was so easy to just move their operations overseas, that they would have done it?

A. I'm sorry. In advance, I don't think he knew that he was messing up. He later found out that he messed up, and then, I think he had correspondence with his patent attorney, and the patent attorney said, it's already happened, you can't undo it.

Q. Mr. Jarosz, that was not the path that Willowood took, is that right? They did not decide, knowing that the patents, the importation would likely infringe, they did not choose to move their operations overseas, correct?

A. Correct. In advance, they did not know they were going to mess up. After the fact, they determined that they did.

Q. Now, I'd like to talk a little bit about the process patents. You provided some reasonable royalty calculations with respect to the process patents, is that right?

A. Yes, that is.

Q. And you performed some analysis, and you came up with roughly about two -- a little over $2 million for reasonable royalties on the '138 and '761 patents, is that right?

A. That's right, if you add those together.

Q. Now, Mr. Jarosz, that would assume that there's a

non-infringing alternative to those patents, is that right?
A. No, it doesn't specifically assume that, no.
Q. Well, you're not -- again, you're not a chemist, that's correct?
A. Correct, I am not.
Q. You're not a process chemist that would be able to determine how to run a chemical reaction at a large scale?
A. I absolutely am not; correct.
Q. You have no experience in running a manufacturing facility, is that right?
A. That's correct.
Q. And, let's talk a little bit about the hypothetical negotiation. In that hypothetical negotiation, you would agree that both parties, Syngenta and Willowood, would have to come to some sort of voluntary agreement, is that right?
A. We presume that, yes, that there would be some agreement between the parties.
Q. And is it your opinion that Syngenta would agree to a reasonable royalty of $2 million -- around -- a little over $2 million, knowing that someone would come in, taking their patented product, and devalue the market?
A. I don't know what they would agree to or what Willowood would agree to. I'm pretty sure Syngenta would want hundreds of millions of dollars and Willowood would want zero. I'm trying to determine what should be paid in light of the

economics and in light of Syngenta's perspectives as of a hypothetical negotiation.

Q. Now, Mr. Jarosz, you provided two reports in this case, is that right?

A. Yes, an original report and a supplemental report.

Q. The first one was on September 12th of last year?

A. That sounds right. I recall it was September.

Q. And the other one was on October 6th of last year?

A. That sounds right. I remember it was October.

Q. And that you testified at a deposition as well just the day after your second report, is that right?

A. Yes. You deposed me for a very long day.

Q. Well, I apologize about that, but I do want to bring back those memories for just a minute.

A. Thank you.

Q. So, those reports -- you know, you indicated you've been involved as an expert in a number of cases --

A. Yes.

Q. -- is that right?

A. I'm sorry. I thought you were done. Yes, I have.

Q. And you understand that the purpose of a report is to set forth your opinions and bases for your opinions, is that right?

A. Yes.

Q. And you understand that you're supposed to set forth all of your opinions and bases, is that right?

A. Yes.
Q. And you were deposed shortly after you submitted these reports with respect to the opinions in your report, is that right?
A. Yes.
Q. And although, today, you know, you -- today you had -- you spoke when Mr. Neuman was questioning you about various things you remember throughout trial from Ms. Kay, and Mr. Heinze, Dr. Wilner, Mr. Cecil, and Mr. Fisher. Do you recall all of that?
A. Yes.
Q. At your deposition, however, you had a lot of -- when I was asking questions, you had a lot of difficulty answering or remembering things, isn't that right, Mr. Jarosz?
A. No, I remembered what I could.
Q. Well, let me see if I can refresh your recollection. Mr. Jarosz, when I asked you at your deposition, Had you ever heard of azoxystrobin before this case, you testified, I don't recall. Is that right?
A. Yes. That's still the case.
Q. And when I asked you, you know, whether you had performed an analysis of sales of azoxystrobin sales before this case, you answered, Not that I recall. Is that right?
A. Correct. I still agree with that.
Q. And when I asked you, Mr. Jarosz, whether you had spoken to anyone at Adjuvants, the entity that actually developed the

formulations for Willowood's products, you answered, Not that I recall. Is that right?
A. Correct. I thought I was under oath then, as I am now.
Q. And when I asked you, What type of formulation activities that Adjuvants carried out in 2013 on behalf of Willowood, you answered, I don't know the specifics. Isn't that right?
A. I said those words. I'm not sure if I used the face that you just did.
Q. And when I asked you, Mr. Jarosz, whether Willowood -- whether you asked Willowood whether they are aware of any formulators outside the United States that were capable of carrying out the formulation activities that Adjuvants performed for Willowood in 2013, you answered, Not that I recall. Is that right?
A. Yes, that's right.
Q. And when I asked you if -- Are you familiar with an entity called Yancheng Tai He Chemicals Company, you answered, I've seen that name, and I don't have a perfect recollection of it. Is that right?
A. Correct.
Q. When I asked you, What's your best understanding of what Yancheng Tai He Chemical Company does, you answered, I just don't recall sitting here right now, I'm sorry. Is that right?
A. That's probably what I said. I don't recall what I said then, but I -- my memory has been refreshed by that.

Q. When I asked you, Did you investigate how much Willowood's manufacturer actually incurs in manufacturing azoxystrobin --

THE COURT: Actually what? I couldn't hear the word.

BY MR. SANTHANAM:

Q. When I asked you, Did you investigate how much Willowood's manufacturer actually incurs in manufacturing azoxystrobin technical, you answered, I don't recall if I have those records. That was your testimony?

A. Correct.

Q. And when I asked you, Did you inquire whether Willowood -- Did you inquire whether Willowood's established existing relationships allowed it to expedite its EPA registration process, you answered, Not that I recall. Is that right?

A. That sounds right, yes.

Q. And when I asked you, Did you ask Ms. Kay as to whether Willowood's established relationships with testing labs and formulators allowed Willowood to accelerate its registration with the EPA, you answered, I don't know. Is that right?

A. Yes.

Q. When I asked you, Do you know what particular tests that Analytical & Regulatory Chemistry, the agency that performed testing in advance of Willowood's registration process, carried out, you answered, I may have seen that, but I don't remember seeing it. Is that right?

A. That sounds right, yes.
Q. And when I asked you, Did you ask Ms. Kay about what Analytical & Regulatory Chemistry did, you answered, I don't know that we did. Is that right?
A. That sounds right, yes.
Q. And when I asked you, Are you aware that Mr. Brian Heinze, Willowood USA CEO, has testified that Willowood was aware of the four Syngenta patents by early to mid-2013, you answered, I don't recall what his testimony was. Is that right?
A. Yes, I didn't recall what his testimony was, yes.
Q. And when I asked you, Are you aware of any instances in which Cheminova has sold products for crop protection use on corn, you answered, Instances? I don't recall if I saw sales. Is that right?
A. Correct. I think that's correct.
Q. And when I asked you, Are you aware of any instances in which Albaugh had sold crop protection products for corn, you answered, I don't recall seeing Albaugh sales, so I don't know. Is that right?
A. That's correct.
Q. Mr. Jarosz, you understand how to testify at a deposition, is that right?
A. I think so, yes.
Q. In fact, Mr. Jarosz, you've testified, at least as of last October, in about 200 to 250 depositions, is that right?

A. Yes, that sounds right.
Q. And of those 200 to 250 depositions -- well, actually, as of last October when I asked, you were charging about $700 an hour for every hour you billed, is that right?
A. My firm was charging my time at $700 an hour, yes.
Q. And when Mr. Neuman asked earlier today, you indicated that you are a managing principal at your firm, is that right?
A. Yes.
Q. So for every one of those $700-per-hour that you charge, you share in the profits of your firm, is that right?
MR. NEUMAN: Objection.
THE COURT: Overruled. You can answer.
THE WITNESS: My compensation is not directly tied to case billings. I do share in the profits of the firm because I helped build the firm.
BY MR. SANTHANAM:
Q. Mr. Jarosz, my question was slightly different. For every dollar you bill, your firm earns more money, is that right?
A. Yes. I didn't know that was your previous question, but I agree with you.
Q. And you share in the profits of your firm, is that right?
A. I do share in the profits of my firm, yes.
Q. Now, Mr. Jarosz, as of October 7th, 2016, when your deposition took place, your firm had billed somewhere between 150 to 200,000 dollars in this matter, is that right?

A. That sounds right, yes.
Q. And you've been working -- presumably, your firm has been billing more in the year since then, is that right?
A. Yes. Not continuously, but at various points in time, yes.

MR. SANTHANAM: No further questions, Your Honor.

THE COURT: Redirect?

MR. NEUMAN: A few questions, Your Honor.

REDIRECT EXAMINATION

BY MR. NEUMAN:
Q. Mr. Jarosz, have you heard any testimony or seen any evidence in this case that Albaugh and Cheminova/FMC are not infringing any of the process patents at issue in case?

THE COURT: I'm sorry. You're looking down, and I couldn't hear.

MR. NEUMAN: I'm sorry.

BY MR. NEUMAN:
Q. Have you seen any evidence or heard any testimony in this case that Albaugh and Cheminova/FMC are infringing the patents at issue in this case?
A. No. I've seen none -- or I've heard none.
Q. Mr. Santhanam asked you a few questions about Albaugh. Bonnie, could you please pull up Plaintiff's 265 in evidence. Could you pull up towards the bottom where it says -- that's fine. Bottom of first page. Pull that up, please.

Do you see the e-mail from Scott Langham to Jeff Cecil at Syngenta dated November 18th, 2015? Do you see that?
A. Yes, I do.
Q. And do you see that Albaugh quoted CPS a price for azoxystrobin? Do you see that?
A. Yes, I do.
Q. And that was not for seed care, was it; that was to CPS?
A. Yes. CPS is Crop Protection Services.
Q. Bonnie, could you please pull up Jarosz 16 -- Jarosz Slide, Demonstrative 16.
Now you were asked a few questions about this slide by Mr. Santhanam. Do those two lines show the relative increase or decrease in the two -- in farm income and azoxystrobin sales at the same time?
A. Absolutely, they do, and I indexed those to 100 to see if the shapes were the same, and they were the same.
Q. So the point of the slide was to show the relative movements, is that right?
A. Yes, what is going up and down at the same time.
Q. Do you recall Dr. Wilner's testimony that, in fact, Syngenta did not drop its prices for azoxystrobin in 2014 other than 3 cents or so? Do you recall that?
A. Yes, I do.
Q. And do you recall testimony and evidence in this case that, in fact, Syngenta raised its price for azoxystrobin in

November 2014?

A. Yes, I recall hearing that.

Q. Mr. Santhanam asked you a few questions about Janelle Kay's testimony in this case, and I want to clarify. Did you hear her identify two laboratories overseas that can conduct the PhysChem testing of the type that was done for Willowood in the United States?

MR. SANTHANAM: Objection, leading.

THE COURT: Overruled. You can answer.

THE WITNESS: Yes, I did.

BY MR. NEUMAN:

Q. Now, in the report that you issued last year before your deposition, did you note in that report conversations with Ms. Kay -- in the written report -- conversations with Ms. Kay by you or people working under your supervision to support your analysis?

A. Yes. I'm sorry. I thought you were done. Yes, I do.

Q. I want to talk to you about crop enhancement and elasticity for a moment. Did Mr. Fisher or Mr. Cecil or Dr. Wichert make any effort to quantify the extent to which the asserted crop enhancement features of azoxystrobin would change the price elasticity that otherwise would apply to azoxystrobin?

A. No, I didn't hear any or see any, but I saw many Syngenta documents that had very high elasticities for the product.

Q. Did Dr. Wilner make any effort to quantify the extent to which the purported crop enhancement features of azoxystrobin would change the price elasticity of its azoxystrobin products?
A. Not that I heard or saw.
MR. NEUMAN: No further questions.
THE COURT: Anything else?
MR. SANTHANAM: No recross, Your Honor.
THE COURT: No? All right. Thank you. You may step down.
(At 12:03 p.m., witness excused.)
MR. TILLER: Your Honor, that's our last live witness. We have a couple administrative issues that we need to deal with, I think, outside --
THE COURT: Okay. Are you talking about exhibits?
MR. TILLER: Some proffers, just to -- for clarity of the record.
THE COURT: All right. Well, ladies and gentlemen, let me excuse you to the jury room for just a moment. Don't talk about the case.
(At 12:03 p.m., jury excused.)
THE COURT: Okay.
MR. TILLER: Your Honor, Felix Chen, who is one of witnesses that you excluded, we just wanted to proffer for the record generally what Mr. Chen would testify to. Mr. Chen has worked with --

THE COURT: I'm sorry. I can't hear, and I'm not sure what -- where is he?

MR. TILLER: Oh, he's not -- you've excluded him.

THE COURT: Yes, I know. So what's your -- what are you doing?

MR. TILLER: I was going to put into the record a proffer of, generally speaking, what he would testify to if he were here.

THE COURT: Um, okay.

MR. TILLER: Mr. Chen has worked with --

THE COURT: As long as it doesn't take very long because the jury's waiting.

MR. TILLER: I have two, very quick.

Mr. Felix Chen has worked with Guanda for seven years. He is the material control manager there. As the material control manager, he manages Guanda's warehouse. In reviewing the documents produced by Tai He, which were offered as DX-169, he confirmed that 101 is the code for azoxystrobin and that both Guanda and Tai He use that code. Guanda has three to five customers who purchase azoxystrobin from it. Guanda and Tai He are business partners. The code 101-B is the code for high hydroxybenzonitrile, which is one of reactants to making azoxystrobin. 101-C is the code for the etherate, which is also a reactant to make azoxystrobin. Guanda obtains the etherate that it uses to make azoxystrobin from Guosheng. He

does not know what DABCO is. He has never seen DABCO in the Guanda warehouse. And all reactant solvents and other materials used in the production of azoxystrobin at Guanda are stored in that warehouse.

Second, Mr. Chiu Zhenghong is a vice president at Tai He. His sole responsibility is Tai He formulation. He prepared the information for Guanda to manufacture the azoxystrobin, and he would confirm that Guanda performs only the condensation step. He says that the only intermediates used by Guanda to manufacture azoxystrobin are etherate, which is purchased from Guosheng, and hydroxybenzonitrile purchased from Yongkai. He has heard of DABCO, but he does not know what it is used for. He would confirm that Tai He does not use DABCO in the manufacture of azoxystrobin.

So those are just the proffers, Your Honor, and I think we would be resting, and we would just renew the motions that we made at the close of Plaintiff's case.

THE COURT: All right. Do you have motions at this point?

MR. LEVINE: Yes, Your Honor. We move -- Syngenta moves under Rule 50(a) for judgment as a matter of law with respect to infringement of the DABCO patent; in particular, that Willowood has not overcome the presumption of infringement. The evidence has not rebutted that presumption, and, therefore, judgment as a matter of law under Rule 50(a).

Secondly, we move for judgment as a matter of law under Rule 50(a) with respect to the validity issue pertaining to the DABCO patent. Willowood's evidence has not shown by clear and convincing evidence that the DABCO patent is invalid.

THE COURT: And for -- your motion, Mr. Tiller, specifically?

MR. TILLER: Again, as to the '761 patent or the DABCO patent that, there is no evidence that -- of infringement.

And two, as to damages, again, renewing the motion as to Dr. Wilner's opinion evidence.

THE COURT: All right. This is what I propose. Just a second. This is -- what I propose is I'll bring the jury in and. I'm going to let them go to lunch. I'll hear from you a little bit. Then when -- then we'll come back, and if Syngenta has rebuttal evidence, which you expect at this point?

MR. LEVINE: Yes, and I did just want to note for the record, for procedural purposes, we renew our earlier Rule 50(a) motion to the extent -- well, and we'll do that after our rebuttal case again just out of an abundance of caution.

THE COURT: All right. Let me bring the jury in and sends them to lunch.

(At 12:09 p.m., jury present.)

THE COURT: Don't get too comfortable. I'm going to

let you all go on to lunch. I have some housekeeping matters to take up with the lawyers. When you all come back from lunch, we'll finish up the evidence this afternoon. So why don't you all come back at 1:25. All right? So that will give you an hour and 15 minutes. Don't get wet, don't talk about the case, and don't form any opinions, and please be back at 1:25.

(At 12:10 p.m., jury excused.)

THE COURT: Okay. I'd like to hear from Syngenta on the validity issue about the DABCO patent.

MR. LEVINE: Your Honor, on that issue, the only evidence that we heard was Dr. Lipton's opinion that the Patent Office got it wrong. In his opinion, the Patent Office got it wrong. Under 35 U.S.C. 282, patents are presumed valid. It's a clear and convincing evidence standard in order for them to overcome that presumption of validity, and the only evidence that was presented was Dr. Lipton's "I think the Patent Office got it wrong."

In addition, what he said was the underlying basis for that opinion of the Patent Office getting it wrong was that out of billions and billions, trillions of possibilities of molecules that Weintritt talked about, he happened to pick out of thin air the one molecule that was azoxystrobin. That is simply insufficient evidence to overcome the presumption of validity based on him simply saying "I think the Patent Office

got it wrong."

Weintritt was considered by the Patent Office. They considered those very arguments, and they ultimately concluded that Weintritt taught away from what Dr. Whitton was teaching in terms of using the condensation step and -- or excuse me -- using DABCO in the condensation step for purposes of making azoxystrobin and using it in less concentrations than what was disclosed in Weintritt. In other words, the very arguments that Dr. Lipton was making were already considered and rejected by the United States Patent Office, and there is no evidence other than I think -- you know, as he said, "I think the Patent Office got it wrong."

The Patent Office got it right, and that's why, under Rule 50(a), judgment as a matter of law should be granted to Syngenta on that issue.

THE COURT: So are you saying his opinion is too conclusory? Is that what you're saying?

MR. LEVINE: Well, it's partly that it's conclusory, but it's also partly that with a clear and convincing evidence standard that the tiny bit of bases that he provided to that conclusory opinion, namely, that azoxy is one of a trillion molecules that are, you know, within the scope of Weintritt, that doesn't overcome the clear and convincing evidence standard. It just doesn't get to that level.

THE COURT: To that level. All right. Thank you.

The Defendant?

MR. TILLER: Your Honor, Mr. Levine talks about but a small, small portion of Dr. Lipton's testimony. What Dr. Lipton said was, the '138 patent claims and -- discloses and claims the exact same condensation reaction as is disclosed and claimed in the '761 patent. It, too, discloses use of a catalyst, although a different catalyst.

Then -- so you start with the condensation reaction in the '138 patent, which gives rise to -- which gives rise to azoxystrobin. So '138, which is clearly prior art, discloses the synthesis of azoxystrobin using the exact same condensation reaction as is claimed in the '761 patent; and, in fact, '138 calls for a catalyst.

It is then that there is in -- I don't believe there will be any dispute that Weintritt does, in fact, disclose the synthesis of azoxystrobin. Yes, among many, many compounds, but, again, you start with '138. You then look at Weintritt, and a person of ordinary skill in the art is deemed to know about the prior art, the prior analogous art. They're deemed to know all of it. And when that person of ordinary skill in the art has -- starts with the '138 patent and everything that's disclosed in there, and then has the Weintritt disclosure, which shows that down to as little as two molar percent of DABCO can catalyze that reaction, it leaves for the person of ordinary skill in the art the sole difference between

what's in '138, in combination with Weintritt, versus '761. The sole difference is that '138, in view of Weintritt, calls for the use of a condensation reaction to synthesize azoxystrobin using as little as 2.0 molar percent DABCO.

What is claimed, as you know, is up to or between .1 molar percent and two molar percent. So literally the two join, the two literally meet up together. There is literally no space in between the two. That -- the person of ordinary skill in the art, and Dr. Lipton testified, the person of ordinary skill in the art is always looking to try to lower the amount of catalyst for all the reasons he testified to, and a person of ordinary skill in the art, he said, would have tried lower amounts than two molar percent, and would have reasonably expected for that to work.

Indeed, we saw, in one of Syngenta's own lab notebooks, that somebody realized, wow, 5 percent is covered, we need to try 1 percent. That's exactly what the person of -- that's exactly what Dr. Lipton testified to would be the thought process of the person of ordinary skill in the art.

And Mr. Levine is simply incorrect when he says that the examiner found that Weintritt actually teaches away from using two molar percent or below. Now, that was an argument that was made by the applicants, among another -- among other arguments, but that was not the ultimate finding, because we don't know what the ultimate finding was.

THE COURT: I didn't remember any evidence about that one way or the other. It may be --

MR. TILLER: There wasn't --

THE COURT: It may be in the documents. I don't know.

MR. TILLER: -- that's my point.

And remember, Weintritt used the terminology in general when referring to 2 percent to 40 percent. And as Dr. Lipton testified to, that would lead a person of ordinary skill in the art to think that while 2 percent of 40 percent is being claimed, something potentially outside of 2 percent to 40 percent could work.

THE COURT: Okay. Now you're repeating yourself.

MR. TILLER: All of that leads to the conclusion that there is at least more than enough evidence for the jury to conclude, even by a clear and convincing evidence standard, that the patent is invalid.

THE COURT: Any rebuttal on that?

MR. LEVINE: Yes, Your Honor. As you noted it was a conclusory statement by Dr. Lipton that the patent office got it wrong, Weintritt allegedly renders the '761 obvious. It was a classic example of a hindsight analysis. He looked at the '761 and then worked backwards and said the '761 relates to azoxy, so then he tried to look in Weintritt and find azoxy and out of trillions and trillions of possibilities, hindsight

allowed him to pick that one molecule.

THE COURT: Well, didn't he say he started with the '138, and that is not hindsight, because that is out there in the world.

MR. LEVINE: Right.

THE COURT: And it's about azoxystrobin.

MR. LEVINE: Yes. The '138 is about azoxy. The condensation step in azoxy, it is a little different than the condensation step in the '761. They both have condensation, but it's not exactly the same. But my point is that the hindsight analysis is he knew what the end result was that he was looking for, and that's what he then approached Weintritt. He looked at Weintritt, with the knowledge of the '138, and used the hindsight analysis but, ultimately, at the end of the day, all it is is a conclusion by him that the patent office got it wrong.

And the arguments were presented to the Patent and Trademark Office in the response by the applicant, Dr. Whitton, as Mr. Tiller said. Those arguments were made. We do know what the patent office did in terms of not only allowing the argument, but allowing those arguments because of the response that Dr. Whitton made to the patent office.

And, David, if you could please pull up DX-5. This is the issue notification. The notice of allowability is what I'm looking for. Keep going. Yeah, one back. Okay. And,

yes, in Blowup No. 1.

And what it says, Your Honor, is this communication, the notice of allowability is responsive to applicant's remarks filed on August 17, 2011. So what the examiner is saying is I considered the arguments that you, Dr. Whitton, made in response to the rejection that had been previously made by the examiner about Weintritt and allowed the application.

So those arguments were considered and accepted by the patent office. The patent issued under 35 USC 282. It is presumed valid. The evidentiary standard that Willowood has to overcome is clear and convincing evidence, and the conclusory statements and opinions by Dr. Lipton do not overcome that standard. Thank you.

THE COURT: All right. Well, it seems -- I'm going to keep that under advisement pending the rest of the evidence. You should assume it'll be denied, and we'll proceed with rebuttal evidence in a little bit over an hour.

What are you all going to have?

MR. LEVINE: Your Honor, we will have Dr. Joe Fortunak. We also will have Dr. Alan Whitton. We may have a short video clip deposition of Mr. Wu, and we are evaluating any additional evidence that we'll bring, but we're cognizant of the time.

THE COURT: All right. Well, I do want to get all of the evidence in today. I don't want to be back tomorrow. I

don't know exactly where we are, but we'll stay today until we get the evidence in. So I'll check about the time limits here. I think we had a bunch of time out of the presence of the jury on evidentiary objections.

MR. LEVINE: Your Honor, if I may, just for the record, as you said you'll be considering this issue with respect to validity of DABCO. The i4i versus Microsoft case is the one that states that prior art that was previously considered should be given less weight, and that's actually a statement that's in the proposed jury instructions.

THE COURT: I recognized it, but I'm glad to have the cite because I did not identify where that came from, so I'll take a look at that case.

MR. TILLER: Do you want me to respond to that, or -- I don't need to if you don't --

THE COURT: Unless you have a case you want me to look at over the lunch break, I'm good.

MR. TILLER: No, but I would just note that I think we have filed -- submitted cases in the past. The standard is always clear and convincing. You don't -- there's not a lesser standard or a higher standard if the evidence --

THE COURT: That's right.

MR. TILLER: It's always the same standard.

THE COURT: Yeah, I didn't hear anything about a different standard so -- but, yeah, okay. Anything else?

Anything likely -- I don't really particularly remember anything about the Dr. Fortunak coming up earlier.

MR. LEVINE: No, Your Honor, and that's because with the burden shifted on the DABCO patent, he's now coming in to rebut the evidence that was presented.

THE COURT: Okay. I'll see you all in about an hour. We'll be in recess until 1:25.

(At 12:24 p.m., break taken.)

THE COURT: My clerk tells me Syngenta is at 13 hours and 13 minutes, and Willowood is at 13 hours and 45 minutes. Okay. Anything before we bring the jury in? No?

MR. LEVINE: Since you're doing the math, the witness we're going to call now is the video clip of Mr. Wu.

THE COURT: Okay.

MR. LEVINE: Twenty-three minutes total; 20 minutes of that will be allocated to Syngenta, three minutes will be allocated to Willowood for the counter-designations.

THE COURT: All right. You can bring the jury in.

(At 1:26 p.m., jury present.)

THE COURT: All right. Good afternoon. I hope nobody got drenched. There was quite a downpour during the lunch hour. I believe we are ready to continue. When you all -- after you all left for lunch, Willowood told me they had presented their evidence, so it is now Syngenta's opportunity for rebuttal evidence. So you can call your next witness.

MR. SANTHANAM: Yes, Your Honor. We're going to call through deposition designation Wu Xiaolong.

THE COURT: Okay.

MR. NEUMAN: And, for the record, there are going to be exhibits used as part of this deposition designation and we've got courtesy binders prepared.

THE COURT: All right. Ladies and gentlemen, this is the same Mr. Wu. You heard some of this testimony earlier. It was read to you without the video during Willowood's case, so Syngenta has some additional testimony they want you to consider, and you'll see the video deposition, but it's the same deposition of the same person, so you'll consider it as if the witness was present in court. I think there was an interpreter used, is that right?

MR. SANTHANAM: That is correct.

THE COURT: Yeah, so you'll notice that, and everybody was sworn just like normal. Yes?

MR. SANTHANAM: Your Honor, there are three -- there are going to be three exhibits that are referenced in this deposition designation; two of which are already in evidence, Defendant's Exhibit 17, Defendant's Exhibit 116. 17 correlates to what is described as Plaintiff's Deposition Exhibit 63. It's also described as Deposition Exhibit 3.

THE COURT: Just to be confusing it has two numbers?

MR. SANTHANAM: It is confusing, but I want to make

that a little bit clearer on the record.

THE COURT: All right.

MR. NEUMAN: Defendant's Trial Exhibit 16 is referred to as Exhibit 1, and the other exhibit in there is Plaintiff's Trial Exhibit 194, which is referred to as Exhibit 4.

THE COURT: Four?

MR. SANTHANAM: Exhibit 4, that's right, and we move for the admission of Plaintiff's Trial Exhibit 194.

MR. TILLER: We would object, Your Honor, relevance.

THE COURT: All right. Overruled. It'll be admitted. You may proceed.

MR. SANTHANAM: Go ahead and play it.

(Video deposition excerpt of Wu Xiaolong played.)

THE COURT: Okay. You can call your next witness.

MS. BALTZER: Your Honor, we call Dr. Alan Whitton to the stand.

THE COURT: Come on up. You are still under oath from your testimony last week.

MS. BALTZER: I have witness binders prepared again. May I approach?

THE COURT: You may.

DR. ALAN WHITTON,

PLAINTIFF'S WITNESS, SWORN

DIRECT EXAMINATION

BY MS. BALTZER:

Q. Good afternoon, Dr. Whitton.

A. Good afternoon.

Q. So, Dr. Whitton, after manufacturing azoxystrobin at Syngenta, do molecules other than azoxystrobin end up being in the final technical product of azoxystrobin?

A. Yes. There are always some low levels of impurities in the product.

Q. And when the technical product is formulated into an end-use product, do these impurities that you refer to remain in the azoxystrobin end-use product as well?

A. Yes. They all go through into the end-use product.

Q. And why is it that these impurities remain?

A. When you make any chemical reaction, you never get a hundred percent yield. You don't get a hundred molecules going in and hundred molecules of product you want going out, so you get byproducts and side reactions that give impurities. These have to come out at the end, but you don't get all of them out 100 percent, so you always end up with some impurities in the product.

Q. Are there any DABCO-related impurities that will remain in azoxystrobin?

A. Yes. In azoxystrobin that Syngenta makes, we see three DABCO-related impurities.

Q. And what are each of those?

A. One of them is DABCO itself and we also see two DABCO-related impurities that can only come from the condensation step.

THE COURT: I'm sorry. Could you just slow down just a hair? I was not quite following the second and third thing you said.

THE WITNESS: My apologies, Your Honor.

We see DABCO in the formulator products and in the technical, and we also see two DABCO-related impurities that can only come from the addition of DABCO into the condensation stage of the manufacture of azoxystrobin.

BY MS. BALTZER:

Q. Dr. Whitton, if you could move the mic, I guess, maybe a little closer, that would be a little helpful for the jury.

A. Oh. Sorry.

Q. So these DABCO-related impurities that you are referring to, how do you look for those in a sample of azoxystrobin?

A. We use a technique called LC-MS/MS.

Q. What is that?

A. It's a sophisticated analytical technique that is basically three machines joined together into one instrument. First of all, you have an LC, which is a liquid chromatography machine. What that does is it takes a complex mixture and it splits it into all its component parts.

Q. What happens after that?
A. The next bit is you have an MS instrument.
Q. What does that stand for?
A. Mass spectrometer. And that takes the peaks that are coming off the HPLC, and you can break those down and see -- or activate them and see what the molecular ions are, what the molecules are that are in them, and you can see -- by a very precise mass, you can count the atoms of carbon, hydrogen, nitrogen, oxygen; and you can be very certain of the molecular formula from that step.
Q. So from using this LC-MS/MS --
A. Sorry. There is a third step as well.
Q. Oh. Sure. Go ahead.
A. The third machine is another mass spec element. So you can take a very specific peak from the first LC -- I'm sorry, the first MS one and break that down into its component parts, so get a fingerprint of that particular molecule.
Q. So from using this LC-MS/MS technique, how can you tell if there are particular impurities that are present?
A. You see a very specific peak and you can see the mass of the peak at very high resolution. It is very precise.
Q. How does -- the mass of the peak that you are seeing, how does that tell you what the impurity is you are looking at?
A. Well, if you have a sample of the impurity that you know what the structure is, you can compare the mass spec or the

LC-MS/MS peak that you see from a sample with an authentic sample and confirm the presence of those impurities.

Q. And is -- this peak that you are referring to, is it on a chart?

A. It is on a chart that comes straight out of a machine, yes.

Q. Have you used this LC-MS/MS technique to analyze whether DABCO and these DABCO-related impurities you were referring to are present in Willowood's azoxystrobin?

A. Yes, we have.

Q. How did you obtain a sample of Willowood's azoxystrobin?

A. Yes, we purchased it from a bottle in the United States.

MS. BALTZER: I'm showing the witness what has been marked as Plaintiff's Demonstrative Exhibit No. 28.

BY MS. BALTZER:

Q. Dr. Whitton, is this an example of the azoxystrobin that Syngenta tested from Willowood?

A. Yes, it is. That's the bottle that was tested from which the sample was taken and was tested.

THE COURT: So that was the Azoxy 2SC?

THE WITNESS: That was Azoxy 2SC of Willowood that was purchased in the United States.

BY MS. BALTZER:

Q. For the testing that Syngenta did on Willowood's Azoxy 2SC sample that it tested, did you oversee that testing?

A. Yes, I did. I initiated it and followed it closely.
Q. What did you do?
A. We knew the molecules that we were looking for, so I requested my analysts to run the Willowood sample and look for the three impurities that we were seeking.
Q. And was that with the LC-MS/MS technique you were referring to earlier?
A. That was on the LC-MS/MS.
Q. What did those results show?
A. What we found was we found all three peaks. We found --

MR. TILLER: Objection, Your Honor. Objection.

THE COURT: I heard that part. Basis?

MR. TILLER: Hearsay.

THE COURT: Oh. Overruled. Go ahead.

THE WITNESS: Yes, we saw all three peaks. There was a DABCO peak and then the two impurity peaks at exactly the right mass, exactly the right positions for what -- I'm sorry, exactly the right mass for what we wanted -- what we were seeking, what we were looking for.

BY MS. BALTZER:
Q. What did Syngenta do next?
A. We wanted to absolutely confirm that the DABCO-related impurities were -- could only come from adding DABCO into the final step of the condensation stage of the process, so we went into the laboratory and generated a sample of impurities

starting with materials that are in --

Q. These impurities that you are referring to particularly here, are those the two byproducts that result from the condensation step of the reaction?

A. Yes, they are. Yes. We started with materials that are present at the start of the condensation step. We added DABCO into them and we prepared --

Q. Dr. Whitton, if --

THE COURT: Okay. If you can stop interrupting him.

MS. BALTZER: I was just going to ask him to slow down a little bit for the jury's sake.

THE COURT: That would be helpful, but please let him finish his answers.

THE WITNESS: So we started with impurities on materials that were in the reaction stage for the process. We then added DABCO into them; and we completed the reaction, worked up, purified to get a very clean product; and then we sent them -- we had them analyzed to determine the exact structure of the molecules.

BY MS. BALTZER:

Q. What did Syngenta do after that?

A. We --

MR. TILLER: Objection. Can I approach really quick?

THE COURT: Okay.

(Bench conference as follows:)

MR. TILLER: He said "we had them analyzed," which leads me to believe that somebody else other than Syngenta did it.

MS. BALTZER: He oversaw it. He said that.

THE COURT: Okay. Well, I'm not quite following his testimony, if he's talking about two different tests or just one. You just have to ask questions because I can't tell.

(Bench conference concluded.)

THE COURT: Go ahead.

THE WITNESS: Yes, we had the --

THE COURT: Wait a second.

THE WITNESS: I'm sorry.

THE COURT: I meant go ahead to the lawyer to ask you the question.

BY MS. BALTZER:

Q. Dr. Whitton, when you are saying "we had the testing done," are you referring to Syngenta did this testing?

A. Syngenta did this testing, yes.

Q. So after you referred to synthesizing these molecules, what did Syngenta do next?

A. We used these molecules to absolutely confirm that apart from DABCO the other two peaks that we found in the Willowood samples were undoubtedly molecules that could only come from adding DABCO into the final condensation stage of the azoxystrobin process.

Q. How did you do that?
A. We used the LC-MS/MS analysis.
Q. What did the results of that show?
A. The results showed that the three peaks that DABCO -- the two impurities that could only come from adding DABCO into the final stage, the condensation stage of the process, to make azoxystrobin were definitely in there.
Q. And when you say "in there," what are you referring to?
A. They were in the sample as received from -- in the bottle from the Willowood production or the Willowood sample.
Q. Dr. Whitton, I would like you to turn to Exhibits 6B, 6C, and 6D in your binder.
A. Yes.
Q. Do you recognize these documents?
A. I do.
Q. What are they?
A. These are the raw machine data that came out from the LC-MS/MS testing of the Willowood samples and the subsequent follow-up testing. They also include the raw machine data from other tests that we did to confirm the structures of the material. The tests nuclear magnetic resonance, NMR, and infrared, these were used to fully characterize the two impurities that we made in the lab.

And the final one, 6C, were the tests that hundred percent confirmed that those impurities were -- the two

impurities that we made in the lab were identical to the two impurities that we found in the Willowood sample and could only have come from putting DABCO into the final stage, the condensation stage, of the azoxystrobin process.

MS. BALTZER: I move for admission of Plaintiff's Exhibits 6B, 6C, and 6D.

THE COURT: Six --

MS. BALTZER: 6B, 6C and 6D.

THE COURT: They'll be admitted.

MS. BALTZER: No further questions, Your Honor.

THE COURT: For Willowood.

CROSS-EXAMINATION

BY MR. TILLER:

Q. Dr. Whitton, this test was run once, right?

A. This test was run several times.

Q. I only see evidence of this test being run once.

A. The test was run -- I think Test 6B was run 18th of February and 6C was run 11th of May.

Q. 6C is the testing of the byproducts?

A. That's the final testing of the byproducts, yes.

Q. And 6B was the identification of DABCO, right?

A. 6B was the identification of DABCO. Plus, also we saw the peaks from the DABCO-related impurities that could only come from the final step -- DABCO in the final step of the process.

Q. And then those -- that alleged DABCO-related impurities

were then tested in May?
A. Correct.
Q. Okay. But -- so one sample of Azoxy 2SC was tested, correct?
A. One sample of Azoxy 2SC.
Q. That's what I mean when --
A. I apologize. Yes, we've done it several times and confirmed the results several times.
Q. Let me ask the question. This data reflects that one sample of Azoxy 2SC was tested, correct?
A. Yes, a sample purchased from the US.
Q. And this was -- you didn't send this out to an independent lab to be tested, did you?
A. No, we did not.
Q. Okay. And with this testing, to the extent that there was DABCO, you were not able to determine how much DABCO was used in the condensation step, correct?
A. That's correct. We --
Q. And, in fact --
THE COURT: Wait just a second. If you can just answer yes or no.
THE WITNESS: Correct.
BY MR. TILLER:
Q. You were not able to determine how much was used in the condensation step, correct?

A. Correct.
Q. Okay. And, in fact, to the extent that you were able to quantify how much was in here, it was far, far below what would be indicative of 0.1 molar percent, correct?
A. That's good because we don't want to have --
Q. Thank you.
A. -- any impurities in the product, so we need to wash it out throughout the process. So we put in the amount we put in and as we go through the process, it diminishes --
MR. TILLER: Your Honor.
A. -- and in the final crystallization it is taken out.
THE COURT: Okay. Stop.
What was your question?
MR. TILLER: It was a yes or no question.
THE COURT: Can you just repeat it?
BY MR. TILLER:
Q. The amount -- to the extent you identify DABCO, the amount of DABCO that was identified in the sample was far below the 0.1 molar percent claimed in the '761 patent, correct?
THE COURT: Just answer if that's correct.
THE WITNESS: That's correct.
MR. TILLER: I have nothing further, Your Honor.
THE COURT: Any redirect?

REDIRECT EXAMINATION

BY MS. BALTZER:

Q. Dr. Whitton, why is it that -- the amount of DABCO that you detect in an LC-MS/MS test like this on an end-use formulated azoxystrobin product, why is it at the level that's far below .1 mol percent?

A. When you put this material in -- the DABCO into the process, you put it in, you get various -- as I said before, no reaction is a hundred percent. You get some of this DABCO going into the DABCO-related impurities. You also get DABCO disappearing in the water washes in there; and in the final crystallization, most of any DABCO that remains goes out. So it's entirely consistent that we wouldn't see the total amount that we put in.

MS. BALTZER: Thank you, Dr. Whitton.

No further questions.

THE COURT: All right. Anything else about that?

MR. TILLER: One very quick question.

RECROSS-EXAMINATION

BY MR. TILLER:

Q. Based on that number -- based on that test, again, you could not identify how much DABCO was used in the condensation reaction, right?

A. The reasonable amount of DABCO to put in is 1 percent.

Q. Could you find --

MR. TILLER: And I'd ask for that to be stricken. He hasn't been identified as an expert.

THE COURT: All right. Sustained. You all just disregard that.

You can repeat your question.

BY MR. TILLER:

Q. You cannot identify how much DABCO was used in the condensation reaction that was used to make the Willowood Azoxy 2SC that you tested once?

A. No, I cannot.

MR. TILLER: Nothing further.

THE COURT: Okay. Thank you. You can step down.

(The witness left the stand.)

THE COURT: You can call your next witness.

MR. SANTHANAM: We're going to call Dr. Joseph Fortunak. Before he takes the stand, we have some courtesy binders.

THE COURT: All right.

DR. JOSEPH FORTUNAK,

PLAINTIFF'S WITNESS, SWORN AT 2:10 P.M.

DIRECT EXAMINATION

BY MR. SANTHANAM:

Q. Good afternoon, Dr. Fortunak. Can you please state your full name for the jury?

A. Joseph Marion Fortunak.

THE COURT: Wait. That mic is not picking up. I don't know --

THE WITNESS: Joseph Marion Fortunak.

THE COURT: That's better. Thank you.

BY MR. SANTHANAM:

Q. Can you tell us who you work for?

A. Howard University in Washington.

Q. Can you briefly give us a little bit of your background? We'll get into it, but tell us a little bit about your background.

A. A little bit is that I'm a process chemist. I'm a professor at Howard University. I teach in the Department of Chemistry and I teach pharmaceutical sciences over in pharmacy as well.

Q. Without getting into the details, can you tell us why you are here today?

A. Yes. I'm here to offer you my opinions on technical matters that are related to the case that we're litigating now.

Q. Have you been retained by Syngenta?

A. Yes, I have.

Q. Are you being compensated for your work on this case?

A. Yes. I'm being paid $525 an hour and that compensation is not related in any way to the outcome of the litigation.

Q. Now, Dr. Fortunak, I promise you, we'll get to your background. Can you tell us what you do at Howard University?

A. I'm a professor. I teach undergraduate and Ph.D. level courses. I teach chemistry, pharmaceutical sciences, green chemistry, chemical synthesis, medicinal chemistry; and I have a research group; and I work with other organizations that have a need for process chemistry and other sorts of development issues that are chemical in nature.

Q. You mentioned that you are a process chemist. Can you explain what that is?

A. Well, if you are doing chemistry, you can do it -- you can think about it on paper and you can see what might work. You can do it in the laboratory. I think we talked about it before in terms of like a jam jar, making just a little bit of something; but if you want to make something that is a product that goes into the marketplace, it takes a lot because there is an awful lot of chemistry that goes into things from making suits to food to crop protection to drugs; and that's where process chemists come in. It's their job to translate these things from a little, tiny scale to something that can be used commercially.

Q. Can you tell us a little bit about your educational background?

A. I have got a bachelor's degree in chemistry from Purdue University. I have a Ph.D. from the University of Wisconsin, Madison. I did post-doctoral work as a research assistant professor at Cambridge University in England.

Q. Is there a particular field of chemistry that you're involved in?
A. I'm a process chemist, so yes.
Q. And I think you mentioned the phrase "organic chemistry." Can you tell us what that is?
A. Sure. Organic chemistry, it's always been the chemistry of life, but along the way people figured out that all living things -- most of that chemistry is dependent on the chemistry of carbon. So the chemistry of carbon and bonding to other carbon atoms and bonding to other atoms, especially hydrogen and a few others like oxygen and sulphur, is what is really important in organic chemistry.
Q. Dr. Fortunak, we've been hearing a lot about this compound called azoxystrobin. Would you call that an organic compound?
A. Yes, it is an organic compound.
Q. Is the chemistry related to that organic chemistry?
A. It's organic synthesis and it's process chemistry as well.
Q. Do you have any industry experience?
A. I do. I had 21 years of industry experience before I joined Howard 13 years ago.
Q. Can you tell us, as part of that industry experience, have you invented any compounds?
A. Yes. I worked in the pharmaceutical industry. I -- the chemistry that I worked on launched 15 new drugs and drug device combinations, and I've also helped launch 25-plus new

generic products. So that's a fair measure of the number of times that I've been through these kinds of processes of, like, inventing the chemistry and then moving it up to scale, moving it into production.

Q. And can you tell us a little bit about the work that you've done in taking processes from small scale to a large commercial scale?

A. Well, yeah. Whenever you've got a new project, you need to -- it's -- you are looking at a molecule and, of course, that's where the chemists get excited, right? And you start off with paper chemistry: How many different ways could I possibly make this molecule? Which ones are -- they're conservative, but they'll probably work? Which ones are really exiting, but they're risky? Which ones are too expensive? Which ones might be safe and which ones are most likely to blow up and which ones should I start working on to see if I can supply what is needed to keep the product in development?

Q. You used the phrase "paper chemistry." Can you tell us what you mean by that?

A. Paper chemistry is something that -- you can look at the prior art or you can invent new chemistry into your mind and you can write it all down on paper, but you don't really know if it works yet.

Q. Dr. Fortunak, as part of your work in industry and your current work, have you been involved in developing analytical

methods or using analytical methods?
A. Yes, because you use analytical methods to test your reactions pretty much every time you run one. You need to know whether or not the reaction is going and whether or not it is making product that you want. So I've used analytical methods pretty much every day of my professional life.
Q. Okay. Have you been involved in the regulatory side of bringing a product to market?
A. I have, certainly more so on the FDA side than on the EPA side. And the EPA, I've only been involved with environmental health and safety and things like environmental impact statements, but, yes.
Q. We've been talking generally about your industry experience. Can you give us a few examples of where you've worked in industry?
A. I spent 10 years at Glaxo -- it used to be SmithKline Beecham. Now, it's GlaxoSmithKline. I worked for eight years at DuPont Pharmaceuticals. And after DuPont was sold, I spent four years as the head of global -- used to be called Global Process Chemistry, then it became Global Chemical Development at Abbott Labs.
Q. And over the course of your industry experience, have you been involved -- have you been in charge of any production facilities?
A. Yes. I think I've probably run, oh, somewhere between 8

and 12 production facilities.

Q. And, Dr. Fortunak, have you received any awards or recognitions for your work?

A. Yes. In 2009, I got the American Chemical Society Award for chemistry impact on human health. In 2013, we received an FDA Honor Award for excellence in innovation in Africa. And in 2014, I got an African Union Award for corporate social responsibility.

Q. Now, have you published any of your work?

A. I have about 75 peer-reviewed publications.

Q. Do you have any patents in your name?

A. I think I have 17 issued US patents and about an equal number of patents that, for one reason or another, were only issued in foreign countries.

MR. SANTHANAM: Your Honor, at this time, we'd tender Dr. Joseph Fortunak as an expert in organic chemistry and process chemistry.

THE COURT: Any questions about his qualifications?

MR. TILLER: No, Your Honor.

THE COURT: All right. He may so testify.

BY MR. SANTHANAM:

Q. Now, Dr. Fortunak, in preparing to testify at trial today, did you prepare any materials to help you explain your testimony to the jury?

A. I did, because I'd like to talk about chemistry, and it's

much easier to look at something instead of just listen to words when we're talking about chemistry. So I'd like to show those as -- I guess it's a demonstrative, right?

Q. So there are two binders in front of you. One of them should have your name on it. And if you could turn to the first tab -- under the first tab, there should be what has previously been marked for identification as Plaintiff's Demonstrative Exhibit 27. Do you see that?

A. Yes, I do.

Q. Are these the materials that you prepared?

A. Yes.

Q. Do they fairly and accurately summarize the work that you've done in connection with this matter?

A. Yes, they do.

Q. Do they fairly and accurately summarize any opinions or conclusions that you've reached?

A. Yes, that's why I prepared them.

MR. SANTHANAM: Your Honor, permission to put up the Plaintiff's Demonstrative Exhibit 27.

THE COURT: All right.

BY MR. SANTHANAM:

Q. Now, Dr. Fortunak, we've been talking about your background. We've been talking about your background, and are you familiar with this concept of a person of ordinary skill?

A. Yes, I am.

Q. And can you tell us what a person of ordinary skill is?
A. So a person of ordinary skill is someone who can -- that can read a patent and they understand what the invention is. And without undue experimentation, they could reproduce what the invention is, given what's in the patent itself.
Q. Okay. And have you prepared any materials to help explain what a person of ordinary skill is with respect to the work that you've done on this case?
A. Could we turn to -- we've got overheads here. Could we get to the one that says, person of ordinary skill in the art?
Q. And before we get there, you have -- have you reviewed each of the Syngenta patents that are asserted in this case, the compound patents, the '138 process patent and the '761 DABCO patent?
A. Yes, I have.
Q. And having reviewed those materials, can you tell us who a person of ordinary skill in the art is?
A. Sure. I believe it's someone who has -- well, first of all, they have to have a degree in chemistry, and so, someone who has a bachelors degree in chemistry or chemical engineering or something that's related to that; and then, about two to three years -- a few years of experience in actually synthesizing organic molecules after that; or, if you have a slightly higher degree, a masters degree, for instance, maybe a little less experience is necessary, one to two years in

synthesizing organic molecules.
Q. Now, Dr. Fortunak, do you believe that you're at least at a level of a person of ordinary skill in the art?
A. I do. And I believe I've actually trained people to become those of ordinary skill in the art.
Q. Now, have you been present at this trial throughout the testimony of other witnesses?
A. I have.
Q. And were you present yesterday when Dr. Mark Lipton testified about a person of ordinary skill in the art?
A. Yes, I was.
Q. Do you agree with Dr. Lipton's definition of a person of ordinary skill in the art?
A. Well, generally. But Dr. Lipton also says that to be of ordinary skill in the art, you'd have to have some years of experience working in agrichemicals, I think in -- was it synthesizing and testing them? And I don't believe that that's necessary to understand the invention.
Q. Do you believe that your opinions are consistent with both your definition and Dr. Lipton's definition of a person of ordinary skill in the art?
A. Well, it doesn't matter which definition would hold, my opinions would be the same.
Q. I'd like to talk about the '761 DABCO patent.
A. Could we change slides, then?

Q. Have you reviewed -- first of all, have you had a chance to review and analyze that patent?

A. Yes, I have.

MR. SANTHANAM: David, if we could go to Slide 27.4.

BY MR. SANTHANAM:

Q. Briefly, Dr. Fortunak, can you tell us what the '761 DABCO patent is generally about?

A. Sure. Well, the '761 patent says this is a way of making azoxystrobin. And we're going to do that last step, the condensation step, using DABCO as a catalyst, but it's within a stipulated range of between 0.1 mol percent and 2 mol percent.

Q. And in -- you used this term "DABCO as a catalyst." What is a catalyst?

A. A catalyst is something that -- it lowers the energy. Strictly, the definition of a catalyst is something that lowers the energy of activation for a reaction to occur so it occurs easier.

Q. And Dr. Fortunak, you specifically mentioned this phrase "mol percent." Can you explain for us what that is, if you can?

A. Well, we've heard it -- you've heard it through the trial, talking about mols. And it's a way of relating molecules and weight. And so, for instance, if you were going to react equal amounts of A and B together, and they were going to couple to make a product, equal numbers of molecules wouldn't weigh the

same because they have different molecular formulas. And so, a mol percent is a way of relating, adjusting for the differences in the molecular formula and the molecular weights so we know how much of these things to react with each other.

Q. And Dr. Fortunak, are there reasons why you would want to use DABCO as a catalyst to make azoxystrobin?

A. Sure, and I've listed them here. You can see the advantages of using DABCO as catalyst. One of them is that it improves the yield. So if you put in 100 molecules of each reacting partner, if you use -- if you don't use DABCO, you're going to get fewer product molecules that come out, so you improve the overall yield. 100 percent is a perfect yield. Everything's going to the desired product. You get closer to 100 percent yield that way.

Q. Are there other advantages?

A. Sure. Because it's a catalyst, well, it lowers -- it increases -- the rate of the reaction happens faster, and so you can actually lower the temperature where the reaction occurs, and that does two extra things for you. It reduces the number of impurities that are in the reaction. And that -- that's a consequence, also, of the yield getting higher.

But another thing is that if you reduce the temperature, you don't have to have as much energy input to do the work, and it's cheaper to run, and it's safer, particularly with azoxystrobin, because we know there's some instability

with temperature of one of the reacting partners that condenses to form this azoxystrobin technical.

Q. Have you looked into what disadvantages might occur if you use DABCO outside of the claimed range?

A. Yeah. And well, you know what? I've got a table for that. Could we go to the -- there's a next overhead here.

Q. Can you explain what disadvantages are there using DABCO outside of the claimed range?

A. Well, this table, most of it is taken from Table 1 of the '761 patent, the first two columns. What it does is it compares the amount of DABCO that you use and the yield of the reaction. Those are the first two columns.

I put in the third column that shows the reaction time. And, you know, forgive me, I'm so tempted -- well, so I'll say it. What we want to take away from this is there's really two major advantages of using DABCO in the claimed range. One is that you can maximize the yield. And the other one is that you can minimize the reaction time. And reaction time is important when you have to make a lot of something or if you're in a manufacturing facility.

In the manufacturing facility that I was last running in the United States, it was $2,000 an hour for running a reaction. So if you run a reaction for a shorter period of time, it's less expensive. But, you can also turn out more in a day if the reaction time's shorter.

Q. Now, Dr. Fortunak, were you here just right before you took the stand, for the testimony of Dr. Alan Whitton?
A. Yes.
Q. And were you -- did you hear his testimony about testing that Syngenta performed --
A. Yes, I did.
Q. -- on -- excuse me, on samples of Willowood Azoxy 2SC?
A. Yes, I heard.
Q. There's a second binder in front of you. And in that binder, there should be tabs for what's been marked as Plaintiff's Trial Exhibit 6B, 6C, and 6D. Do you see those?
A. I do.
Q. And have you reviewed these materials as part of your work in this case?
A. Yes, I have.
Q. I'd like -- and are you familiar with what Syngenta's testing?
A. Yes, I am.
Q. I'd like to talk -- before we get into those results, I'd like to talk generally about the analytical procedures or methods that were used. Are you familiar with those methods?
A. Yes, I am.
Q. And can you briefly tell us what those methods are.
A. So bear with me here, because I'm a professor, right, we can't -- we love to talk about stuff. Can we go to the next

overhead? This is one that -- so high-performance liquid chromatography, used to be called high-pressure liquid chromatography, was used. This is a technique that's used to separate out the components of a mixture.

So if we relate it to what's going on here with azoxystrobin, what you see is that the biggest component in a mixture is azoxystrobin, but you're also going to see little, tiny impurities that are present, and you can separate them by this high-performance LC.

Now, the second thing that's used is mass spectrometry. And you also heard from Dr. Whitton that you can put two of these together as a technique called MS/MS. And what mass spectrometry is, is you put a whole lot of energy into a molecule. Sometimes, you pound it with high-energy electrons. But what happens then is that the molecule ionizes and it gets charged. And as a consequence of that, you can tell what its exact mass is, so you can tell what the molecular formula is.

Q. And there are other techniques that you mentioned -- that are mentioned, infrared spectroscopy and nuclear magnetic resonance spectroscopy. Do you know if Syngenta performed those procedures?

A. Yes.

Q. Dr. Fortunak, I'd like to have you walk us through some of these a little bit -- in the interest of time, quickly -- but I

also would like to have the Court understand at a high level what these are. Can you explain for us what chromatography is?
A. So chromatography is that you make a solid support. And in a simple column, it might be just finely ground sand. You put sample on there that you want to separate things, and that's the stationary phase. And you wash the sample down the stationary phase with a solvent. And if you look in the middle there, you can see three different colored bands. That represents that there would be three different components in a mixture, and as the solvent runs down the column, those -- the components in the mixture, they flow at different rates, so they separate.

And, then, as you see the fourth and fifth, as we go from left to right, those -- the bands elute, so you can separate the different components, and that's a lead to identifying them.

Q. Dr. Fortunak, you mentioned this phrase high-performance liquid chromatography. Again, very briefly and at a high level, can you explain what that is?
A. Sure. High-performance liquid chromatography means you do all of this under very high pressure. And what happens is you get really good power to separate the components in a mixture, and you can tell, very small amounts, what's present. And you you've got -- an LC is represented over on the left, but if you look on the right, what's important is you can look at a

chromatogram, and what it looks like is that you look at how much time it takes for the sample to run down the column, and you see peaks whenever one of the components comes off the column.

Q. Now, you also mentioned this phrase, LC-MS/MS. Can you explain what that is at a high level?

A. Yes. So what you do, then, is you combine the LC, and as the components come off of the LC, you put them on mass spectrometer, they get ionized, and you can tell what the molecular formula is.

Then, those ions, they fragment into smaller ones. And you can take each one of those ions, and you can put it in a second mass spec and watch it fragment further. The importance of all of that is that it's sort of like forensic evidence. You can put it all back together, like the pieces of puzzle, and you can come up with structure of what the molecule is that's a component in the mixture.

Q. Can you explain for us what -- at a high level, infrared spectroscopy and nuclear magnetic resonance spectroscopy are?

A. Well, once you've got a sample, you also want to have more information about what a structure is. Infrared spectroscopy is really low energy. And what happens is that you're sort of bending and tickling. You're tickling the molecule, and the bonds bend and stretch, and that gives you a different kind of information. And I've used caffeine to represent so you can

see the infrared spectrum of caffeine that's shown here on this overhead.

Q. What about nuclear magnetic resonance spectroscopy?

A. Well, there's two basis kinds of NMR that I'm going to talk about. One of them is carbon, and the other one is H -- hydrogen, or proton, NMR. And carbon nuclear mass resonance allows you to find out what the skeletal structure of all of the carbons that make up the molecular framework are, and proton NMR lets you find out where the hydrogens are attached to the carbons and how many there are at each site and where they're attached to other atoms as well.

Q. Dr. Fortunak, is there any benefit to using all of these techniques together?

A. Well, you want to use them to get as much information as possible so you have the surest confirmation of the structure. But, another thing is, all of these pieces of evidence need to hang together so that you can be confident that you've got the right structure identified.

Q. And did you, in reviewing Syngenta's testing data, were you able to look through and see all of the results from these various methods?

A. Yes. In fact, there were some other techniques as well that are even more esoteric.

Q. And, Dr. Fortunak, have you been able to reach any conclusions based on Syngenta's testing of Willowood's Azoxy

2SC?

A. Yes, I have.

Q. And can you describe for us what that -- what that testing shows?

A. So the testing shows a few things. It shows that there was DABCO in the Willowood Azoxy 2SC. Another thing it shows us is that that DABCO had to be present in the condensation step.

Q. Can you explain why that is?

A. Yeah. That's because what happens is that the DABCO -- there's no such thing as the perfect catalyst. They don't last forever. You know, all of these little -- every time you run a DABCO reaction, like the '761 patent reaction, every once in a while, a molecule of DABCO gets high-jacked and it reacts with the other partners that would otherwise make azoxystrobin. So DABCO gets incorporated into a byproduct.

And what you could do is you could use those as fingerprints. There's low levels of them in a condensation reaction if you use the DABCO. And what happened in -- the Syngenta testing results showed that there were two byproducts, 1 and 2, that incorporated the DABCO into them. So they were identified by LC-MS/MS. And what happens is that if you see DABCO there, and you see these by products, you know that DABCO had to come from that condensation step.

Q. Dr. Fortunak, is there any way that the DABCO might have

come from other sources, one of the other components that go into Willowood Azoxy 2SC?

A. Well, no, for multiple reasons.

Q. Can you explain?

A. Well, I've looked at a list of the excipients, the adjuvants that go into this formulation. None of them is DABCO. DABCO is not present naturally, so it shouldn't be in there accidentally. DABCO isn't used in the manufacture of any of the adjuvants that go into the formulation. And these fingerprint impurities, they tell us that the DABCO had to be introduced at the condensation step.

Q. Now, Dr. Fortunak, is there any way that DABCO and 2DABCO byproducts such as the ones that you observed could be found in Willowood Azoxy 2SC, and that DABCO is not used in the condensation step?

A. No.

Q. Now, in order to give the jury a brief understanding of what these test results are, I'd like to walk through some of those results. And you've reviewed those results that are in your binder, is that right?

A. That's correct.

MR. SANTHANAM: David, if you could put up Plaintiff's Trial Exhibit 6B for us, and what we have here is the first page, which is SYN 10181.

BY MR. SANTHANAM:

REDACTED

REDACTED

REDACTED

MR. SANTHANAM: David, can we go to SYN 10188.

BY MR. SANTHANAM:

Q. And, Dr. Fortunak, can you explain what we're seeing here.

A. So this is where there's a peak that elutes that has an exact mass that is -- that's got the molecular formula of Byproduct 2 that was found in the Azoxystrobin 2SC.

Q. And when you say Byproduct 1 and Byproduct 2, are these the same byproducts that you referred to before as being formed in the condensation reaction?

A. That's correct, and they're the ones that I wanted to confirm that Dr. Whitton and his group had identified.

Q. And you also mentioned infrared spectroscopy and nuclear magnetic resonance spectroscopy. Can you turn to Plaintiff's Trial Exhibit 6C -- 6B, excuse me. Actually I think it's 6C. Can you tell us if that's -- 6D.

A. I think we're 6D, aren't we?

Q. Can you tell us if that's what you're referring to in terms of data from nuclear magnetic resonance spectroscopy and IR spectroscopy.

A. Yeah, so remember, you can't be saying I just -- I got a molecular formula, I know it's the right stuff. You have to -- so what the Syngenta folks did is they went back and in the laboratory they did the reaction with DABCO in there, and they isolated these impurities so that they could get a good characterization on them, prove what they were using these NMR

techniques and infrared.

Then what they did is they took those samples and they co-injected them with the Azoxy 2SC to show that they eluted at the same place so you could get proof that the byproducts were the right byproducts.

Q. Now, Dr. Fortunak, you used this term fingerprint before. What do you mean by that?

A. So, well, a fingerprint is -- it's characteristic, it's something -- to me it's something that I got -- that I have inherent in my fingers, and this is -- I'm calling it a fingerprint because it's inherent in what happens in a reaction.

If you're going run the azoxy condensation step with DABCO, you're going to generate some of these fingerprint impurities, and you should see them at low levels.

Q. Dr. Fortunak, have you reached a conclusion, based on your background in process chemistry and analytical methods, to a reasonable degree of scientific certainty, as to whether DABCO is used in the condensation reaction that's used to make Willowood's azoxystrobin technical?

A. Yes, I have.

Q. What is that conclusion?

A. I'm completely convinced. The azoxystrobin technical that was in the Azoxy 2SC, it was made by a process that has DABCO in it.

Q. Now, Dr. Fortunak, switching to a slightly different topic. Were you here yesterday when Dr. Mark Lipton testified about the Weintritt reference and the validity of the '761 DABCO patent claims?

A. Yes, I was.

Q. Now, do you believe that the '761 -- the Weintritt reference invalidates or renders obvious the '761 DABCO patent claims?

A. No, I don't believe that.

Q. And can you explain why that is.

A. Yes. On -- I actually have some more demonstratives on that if we can take a look at them. Actually, could we -- thank you. I was going to -- what this is is I've pulled, as we saw with Dr. Lipton, this figure out of the Weintritt patent. So, again, I wanted to use Dr. Lipton's -- he described to us that Weintritt's claims refer to uncountable numbers of compounds. Let's just say that there's billions of possibilities here, okay?

Q. And, for the record, I'm going to put up what was marked as Plaintiff's Demonstrative 26. Is this what you're referring to, Dr. Fortunak?

A. Oh, yeah. But I don't think Dr. Lipton drew that up.

Q. And can you tell us what you mean by there could be uncountable numbers of molecules that were represented by this formula in Weintritt.

A. Okay. Well, there's one kind of -- we can -- L1, 2, 3, 4 and 5 that you can see, they can all be about 50 or more different things, 50 at a minimum. And since they're all interchangeably present, then we can have 50 times 50 times 50 times 50, and then even if we just let L5 -- so L5, optionally it could be what they call the warhead piece of making these antifungal things.

Bayer had one series of drugs that had a certain warhead on them, and azoxystrobin's got a different warhead, and in the Weintritt patent we referred to 13 different warheads. Well, it would be, you know, 50, 50, 50, times 50 times 13. Those are the possibilities we have for different structures of that right-hand ring.

And then X, X could be H, chlorine, fluorine and bromine. I don't think it could be iodine, but it's a halogen in H.

Q. Dr. Fortunak, do you believe that a person of ordinary skill -- we talked about a person of ordinary skill. Do you believe that a person of ordinary skill would review Weintritt and would be led to making azoxystrobin?

A. No. No, I don't.

Q. And do you know if Weintritt has examples of making azox -- of any compounds -- withdrawn.

Do you know if Weintritt has examples of making any compounds?

A. Yes. Weintritt has five examples, and as you can see on the demonstrative, they don't make azoxystrobin. They make other compounds.

Q. Now, Dr. Fortunak, we heard testimony from Dr. Lipton about combining the '138 patent, which talks about azoxystrobin with Weintritt. Would a person of ordinary skill in the art have any reason to combine the '138 patent with Weintritt?

A. No. It creates a problem.

Q. What is that?

A. Well, it's -- I can explain it. Remember, making azoxy through the '138 patent, that's prior art, right, it's there. Well, azoxy there is made by -- it's a condensation -- it's an etherification step and then it's a condensation step.

Weintritt does two condensation steps. If you look at -- look at the ring that's got two ends in it. What Weintritt does is -- and forgive me, I'm going to assume you know a lot of organic chemistry now. Weintritt puts both of these AROs, right, to the left hand -- the left hand AR1O and it introduces the O with the ring and the L1 through L5. It introduces those sequentially in this same reaction. That's what Weintritt does.

But the '138 patent doesn't do that. The '138 patent opens up a methylene benzofuranyl, and then it reacts it with dichloropyrimidine, and it does the first condensation, then you isolate that intermediate. Then the '138 patent, you only

do the second condensation step. So what you'd actually have to do is to say I'm going to go backwards, and I'm going to actually include a new isolated intermediate so that I can then try and combine Weintritt with '138.

Q. Dr. Fortunak, we heard testimony that Weintritt discusses a condensation step. Is that the same condensation step as what's described in the '138 patent?

A. No, it's not.

Q. Now, assuming, for example, that a person of ordinary skill in the art would want to look at Weintritt and say I'm going to make azoxystrobin. Would that same person of ordinary skill in the art be led to using DABCO between levels of .1 mol percent and 2 mol percent as set forth in the DABCO patent?

A. I don't think so. It's -- yesterday we looked at page 6, paragraph 109, I think, of Weintritt.

Q. Do you want to look at the Weintritt reference? I think it's in your binder. Let me make sure. Yes. Exhibit 6. It's on the screen. Where did you want to go?

A. I think it's page six, paragraph 109.

MR. SANTHANAM: David, can you blow that up.

BY MR. SANTHANAM:

Q. What are we looking at here, Dr. Fortunak?

A. Well, this is actually a paragraph that we discussed during Dr. Lipton's testimony, and it's a discussion of the prior art and the Weintritt invention, okay. So what it's

saying is that previously it used to take a full mol equivalent or more of a tertiary amine to catalyze this reaction.

THE COURT: Say again.

THE WITNESS: It used to take a full mol equivalent or more of an tertiary amine to catalyze this type of a condensation.

BY MR. SANTHANAM:

Q. Is DABCO a tertiary amine?

A. Yes, it is.

Q. And what are the reasons you believe that a person of ordinary skill in the art would not use DABCO at the levels of .1 or 2 mol percent?

A. Well, the inventors say that they found, surprisingly, extremely surprisingly, that they could do this in the range of two to 40 mol percent. In addition to that, if we go below two mol percent, what they tell us is that using no DABCO, so that's without the addition of DABCO, and that is in the last -- the second to the last sentence. The product can only be isolated in very poor yields is the last sentence here.

Q. What does the combination of that information tell a person of ordinary skill?

A. Well, a person of ordinary skill would be thinking, okay, here's an invention but, you know what, this is as far as I can carry it. If I don't have any DABCO, then the reaction's going to be very poor. If i have two to 40 mol percent, it's

surprising that it works, but now that's here, I know it works.
Q. Dr. Fortunak, are you familiar with what's called the prosecution history, the file history?
A. Yes.
Q. Have you reviewed the file history of the '761 DABCO patent?
A. I have.
Q. And can you tell us generally whether the Weintritt reference and the '138 patent were considered during the prosecution before the patent office?
A. Yes, they were.
Q. And can you tell us what the end result of that was?
A. The end result, considering Weintritt and the '138 patent, these were presented by the inventors to the patent office, there was discussion back and forth and the patent was granted.
Q. Dr. Fortunak, in order for Weintritt and the '138 patent to validate the '761 DABCO patent, what would need to be true?
A. Okay. So Alan Whitton, and the other inventors on the '761 patent, well, they considered Weintritt when they applied for a patent, and they must have gotten it wrong; and in considering the file history, looking at the prior art, I must have gotten it wrong, too; but, most importantly, the patent examiner must have gotten it wrong.

MR. SANTHANAM: No further questions, Your Honor.

THE COURT: All right. How long do you think you'll

be?

MR. TILLER: Twenty, 25.

THE COURT: Okay. All right. Well, we'll go ahead take the afternoon break. Ladies and gentlemen, please come back at 10 minutes after three. Don't talk about the case or form an opinion. The jury's excused. Leave your notes in your chair.

(At 2:50 p.m., jury leaves.)

THE COURT: Is this your last witness on rebuttal?

MR. LEVINE: Yes, Your Honor.

THE COURT: Yes? Okay. And are you all anticipating further evidence?

MR. TILLER: Probably no.

THE COURT: Okay. Well, just -- I won't hold you to that, I'm just trying to figure out the day. Well, it looks like we'll be in good shape then to let the jury go at the close of all the evidence, and we can proceed.

Anything we need do before we take our recess? All right. We'll be in recess 15 minutes.

(At 2:54 p.m., break taken.)

(At 3:08 p.m., break concluded.)

THE COURT: Okay. We can bring the jury back in unless there's anything --yes?

MR. LEVINE: Yes, the Wu video we'll submit as Plaintiff's Exhibit 505 for purposes of the record. I move to

admit Plaintiff's Exhibit 505, the transcript of the Wu deposition designation that we played earlier, but it will not be in the notebook that goes back to the jury.

THE COURT: All right. That will be admitted, to complete the record.

Anything else we need to take up? No. You can bring the jury in.

(At 3:09 p.m., jury present.)

THE COURT: All right. I believe we were ready to turn to cross-examination, so you may proceed.

MR. TILLER: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. TILLER:

Q. Good afternoon, Dr. Fortunak.

A. Good afternoon, Mr. Tiller.

Q. You understand what prior art is, don't you?

A. Yes, sir.

Q. And would you agree with me that prior art is a disclosure of some sort of public disclosure, whether it's in a patent, a patent application, or a journal, or a paper that's been written, that was published before the earliest application date for the patent to which you are comparing it to, correct?

A. That's correct.

Q. Okay. And you would agree with me that the '138 patent is prior art to the '761 patent, correct?

A. I do agree with you.
Q. And you would agree with me that Weintritt is prior art to the '761 patent, correct?
A. That's correct.
Q. Okay. At the time that the Weintritt application, which is -- you understand that the Weintritt application did eventually become a patent, correct?
A. Yes, I do.
Q. And that is owned by Bayer?
A. Yes, I do.
Q. And at the time that the Weintritt application published, DABCO was a well-known catalyst in organic synthesis, correct?
A. That's correct.
Q. Okay. And a person of ordinary skill in the art would have been familiar with DABCO and its catalytic defects at that time?
A. That's correct.
Q. And would you agree with me that someone skilled in the art, this person of ordinary skill in the art, would have found Weintritt, if looking for it, in, let's say, 2003 after it was published, if that person was studying improved processes to make azoxystrobin?
A. That's an interesting consideration. I'm not sure about that, but possibly, yes.
Q. Okay. I won't have to go -- we won't have to look at your

deposition.

Now, would you agree with me that Weintritt -- despite the fact that you testified that it covers, I think you used the word, billions of potential compounds, Weintritt does disclose the synthesis of azoxystrobin in the presence of 2 to 40 molar percent DABCO, correct?

A. It depends on what we mean by "disclose." It doesn't exemplify it; but out of the many compounds which are allowed for the synthesis in the Weintritt patent, azoxystrobin is one such compound.

Q. Okay. Just to make sure we're saying the same thing, while azoxystrobin is not specifically called out, a person of ordinary skill in the art would know that the disclosure as set forth in Weintritt would disclose azoxystrobin?

A. Correct.

Q. And the person of ordinary skill in the art would know that the scope of Weintritt's claims cover the synthesis of azoxystrobin in the presence of 2 molar percent to 40 molar percent DABCO during the condensation step, correct?

A. That is correct.

Q. And, in fact -- Bonnie, could we see DX-35, specifically, page 291896, please?

MR. SANTHANAM: Your Honor, we object to beyond the scope.

MR. TILLER: It's going to take two questions,

maybe --

THE COURT: Well, go ahead. Overruled.

MR. TILLER: Bonnie, if you could call out that bottom paragraph there.

BY MR. TILLER:

Q. And, Dr. Fortunak, you were here what seems like months ago at the beginning of this trial when Dr. Whitton testified the first time?

A. Yes, I was.

Q. And did you recall him -- you were here when he testified -- or strike that. Do you recall him testifying that in this Syngenta laboratory notebook it says "Subsequent to this work, 5 molar percent DABCO infringes upon Bayer patent and cannot be used. Hence, we need to repeat experiments at 1 molar percent DABCO." Do you see that?

A. I do.

Q. So would you agree with me that it appears that this person, Mr. Wallace, I believe, realized that using 5 molar percent DABCO to catalyze the reaction to make -- to synthesize azoxystrobin infringed upon the Bayer patent?

MR. SANTHANAM: Objection, foundation and speculation.

THE WITNESS: But I do agree.

THE COURT: Overruled. You can consider the answer.

BY MR. TILLER:

Q. And, again, would you agree with me that Mr. Wallace seemed to believe that, therefore, as a result, Syngenta --

THE COURT: Well, if you would say it some different way, other than what some other person believed.

MR. TILLER: Fair enough. I'll move forward.

BY MR. TILLER:

Q. Now, you -- you're aware that sometimes patents do end up being invalidated in court procedures, correct?

A. Yes, I'm aware of that.

Q. And in those procedures where that isn't done -- where that is done, that would mean that the patent examiner did not correctly allow the patent, correct?

A. I'm not enough of a legal expert to quite understand what your question is.

Q. I'm just asking: You're aware the patents are sometimes found to be obvious in court proceedings, correct?

A. That's correct.

Q. Therefore, by definition, since the patent had been issued, if the Court or a jury finds that it was obvious, that means that it was incorrect for the patent to have been issued in the first place, correct?

A. Correct. It doesn't mean the patent examiner got it wrong.

Q. But it means it was --

A. For instance, other (Cross talk) --

Q. Fair enough. I got it. And in those cases, it would mean that the inventors or the alleged inventors, the applicants we'll call them, were incorrect in their assumption that they had invented something that was not obvious, correct?

A. That is correct.

Q. Now, you said when you were testifying in response to Mr. Santhanam's questions that the '138 patent has -- claims two condensation reactions. Was I correct when I heard that?

A. I'm not sure that that was correct, but go ahead.

Q. Well, I'm asking that first question.

A. So the -- what we call the etherification step, right, what it involves is we have a methylene benzofuranyl. That methylene benzofuranyl is opened with --

THE COURT: If you can keep your voice up, please.

THE WITNESS: That methylene benzofuranyl is opened with base, with I believe it's potassium methoxide, and the phenoxide ion then reacts with 2,6 dichloropyrimidine to substitute for one of the chlorides. That product is isolated and that is the product of the etherification step.

BY MR. TILLER:

Q. And there is a similar reaction that is disclosed in Weintritt, correct?

A. That's correct. It is similar.

Q. Okay. And then could you again describe the second reaction that is claimed in '138, what we've been referring to

as the condensation reaction?
A. So in the condensation reaction, cyanophenyl is reacted with the product of the etherification reaction in the presence of a base. In that reaction, the phenoxide displaces chloride and that is the condensation reaction that gives rise to azoxystrobin technical.
Q. And there is a similar reaction that is disclosed in the Weintritt publication, correct?
A. That's correct.
Q. Okay. Now, the testing that you heard Dr. Whitton testify to -- you heard him say that there was one sample run, correct?
A. Umm, one sample of what run, please?
Q. The Azoxy 2SC that was tested, they did -- the tests were done once. You heard Dr. Whitton say that, correct?
A. No. I heard him say that there was one sample of Azoxy 2SC that was obtained. That was tested.
Q. But you didn't do any testing yourself, did you?
A. That's correct, Mr. Tiller.
Q. And you heard Dr. Whitton testify that from that testing results -- from the testing that was done he could not determine how much DABCO was used in the condensation reaction, correct?
A. I am not quite sure I heard that correctly. I think that might be what he said today.
Q. Let me ask you this: From that -- those -- are those the

only tests on which you are relying for your opinion?
A. No.
Q. I didn't hear you testify to any other this morning.
THE COURT: You need to ask him a question rather than make a statement.
BY MR. TILLER:
Q. You didn't hear -- you didn't testify to any others, did you?
A. That's correct. I did not.
Q. Okay. And from that testing that Syngenta did to which you testified to, would you agree that you cannot determine how much DABCO was used in the condensation step to make the azoxystrobin which was included in that sample? Correct?
A. I'm not sure about that. My memory may be faulty, but I believe that it was approximated at 200 parts per billion.
Q. That's how much was in the Azoxy 2SC that was tested.
A. Yes. Thank you.
Q. Okay.
THE COURT: You need to ask questions, please. You cannot testify.
MR. TILLER: I'm sorry.
BY MR. TILLER:
Q. Is it true that was the amount of DABCO found in that sample of Azoxy 2SC?
A. Yes, that's correct.

Q. Okay. And 200 parts per billion, is that the number you said?

A. That's correct.

Q. Okay. 200 parts per billion does not equate to 0.1 molar percent DABCO in the condensation reaction, does it?

A. No, Mr. Tiller, it doesn't.

Q. Okay. And there is no way to quantify based on Syngenta's testing -- strike that. Is there a way to quantify, based on Syngenta's testing, how much azoxystrobin was included in the condensation -- how much DABCO was included in the condensation reaction that was used to make that sample?

A. That's correct.

Q. Okay.

THE COURT: There is not a way to quantify? Is that what you are saying?

THE WITNESS: Yes.

THE COURT: Okay. Go ahead.

MR. TILLER: Why don't I say it again just to be clear.

THE COURT: Okay.

BY MR. TILLER:

Q. So I'll make the statement. If we're looking at Azoxy 2SC, testing it, we're finding DABCO, 200 parts per billion, we cannot correlate that to a definite amount of DABCO that was used in the condensation step. The best way to figure that out

would be to actually go to the plant, watch the production process, and test what is being done during that production process, correct?

A. Please, can you help me? The best way to figure out the amount of azoxy in -- the amount of DABCO in azoxy technical or the amount used in the condensation reaction?

Q. It's the latter one, the amount used in the condensation reaction.

A. That is correct.

Q. Okay. And you did not do that?

A. That's correct.

Q. Okay. And you didn't ask to do that?

A. No, I did not.

MR. TILLER: Bonnie, if we could please put up Plaintiff's Demonstrative Exhibit 27.5.

BY MR. TILLER:

Q. Dr. Fortunak, this is a table that is -- that comes directly out of the '761 patent, correct?

A. No, Mr. Tiller. If you recall, I added the third column with reaction time.

Q. You're right. I'm sorry. I -- I -- you're right. The first two columns come out of the '761 patent, Table 1, correct?

A. That's correct.

Q. And the reaction time comes out of the written disclosure

portion of the '761 patent, correct?
A. Correct.
Q. Okay. You would agree with me that 2 molar percent DABCO as is set forth here is outside of the claimed range, correct?
A. That's correct.
Q. So one could use 2 molar percent DABCO using the condensation reaction that is otherwise claimed in the '761 patent and not fall within the scope of the claims, correct?
A. That is correct.
Q. And thus not infringe?
A. Correct.
Q. Okay. And 0.1 molar percent is also outside of the claimed range, correct?
A. I'm not sure that I recall correctly on that. I thought that the claim was between 0.1 and 2 mol percent.
Q. Exactly. It is. It's between 0.1 and 2 molar percent. Is that your memory?
A. That's correct.
Q. Okay. So would you then agree with me that 0.1 molar percent is outside of the claimed range?
A. I've got to be honest with you. I'm not sure about the legal definition of that; but if you purported to me that 0.100 percent, for instance, is outside the claimed range, then I would have no reason to dispute it.
Q. Okay. And certainly you would agree with me that

0.9 -- 0.0999999 percent is outside of the claimed range?
A. No, sir. We're running into a problem of significant figures and basic math, so if you take it down to, like, .094.
Q. How about we take it down to .094. That's outside of the claimed range, right?
A. That is outside the claimed range.
Q. Okay.
A. I'm sorry. And I'm not teasing you, rather.
Q. I believe you. Do you recall -- strike that. Using 0.1 molar percent is pretty close to getting optimal when using DABCO to manufacture azoxystrobin, correct?
A. No.
Q. It's not?
A. It's pretty close --
Q. Well, that's what you --
A. I'll wait for your next question.
Q. Well, do you recall telling me that Dr. Whitton indicated to you that .1 percent was pretty close to optimal?
A. Let's qualify what we're talking about, shall we? It is pretty close to optimal yield, you'll notice, 93.4 percent, and what it's not so good on is reaction time. So although the reaction yield will be pretty good, it's taking you a longer time to run the reaction.
Q. Sorry. I'm looking at the wrong deposition.
MR. TILLER: May I approach?

THE COURT: You may.

MR. TILLER: Counsel, we're going to be looking at page 110. I'll get you the line number in a second.

BY MR. TILLER:

Q. Doctor, I would like you to take a look at page 110 of your deposition, specifically line 16 of that page. Do you have that?

A. I do.

Q. And would you agree with me that when I asked you about .1, which was .1 molar percent DABCO, would you agree with that?

A. Yes.

Q. Okay. You said, at .1 he -- and we were talking about Dr. Whitton at that point, correct?

A. Well, I'll -- I'm sure that you've looked at this, so I'll believe you on that.

Q. You are welcome to take a look.

A. No, no, we don't need do that. It's okay.

Q. At .1 he indicated that you were pretty close to getting optimal. The difference between .1 and 1 percent was, if anything, very small. Do you see that?

A. I do.

Q. Okay. And there you didn't mention anything about the time difference, correct?

A. That's correct.

Q. Okay. Now, the time can also be shortened by increasing the temperature, correct, at which the reaction is done?
A. That is correct.
Q. Okay. And are you aware that in the '761 patent the example at 0.1 molar percent was done at 80 degrees Celsius?
A. If you purport that to me, I'm --
Q. I'm happy to show it to you if you want, but --
A. No, I'll accept that.
Q. Okay. And do you recall that Tai He or Tie Ha (phonetic), as it has sometimes been called, does its reaction at about 120 degrees Celsius?
A. I believe that's correct for the condensation step, yes.
Q. And that increase in temperature would increase the speed at which the reaction occurs, correct?
A. That is correct.
Q. And you're aware that -- prior to conceiving of the method that is claimed in the '761 patent, you're aware that Syngenta used essentially the reaction that is claimed in the '138 patent, correct?
A. I think you used the word "conceived," is that right?
Q. I did use the word "conceived."
A. I'm sorry. I misheard you. I thought you said conceded.
Q. I guess that's a patent term. I'm sorry. I probably shouldn't have. How about -- let me ask it again because you're right, conception is for --

THE COURT: Okay. Just ask your question.

BY MR. TILLER:

Q. Before coming up with the DABCO method, Syngenta was making azoxystrobin, correct?

A. That's correct.

Q. And it was making azoxystrobin without DABCO, correct?

A. That's correct.

Q. And it did that for, I think, eight or nine years, correct?

A. Some number of years, correct.

MR. TILLER: Your Honor, if I can take two seconds, I might be done.

THE COURT: All right.

(Pause in the proceedings.)

MR. TILLER: Nothing further, Your Honor.

THE COURT: Any redirect?

MR. SANTHANAM: None, Your Honor.

THE COURT: You can step down.

(The witness left the stand.)

THE COURT: Further evidence for Syngenta?

MR. LEVINE: No, Your Honor. Syngenta rests.

THE COURT: Okay. Can I speak to counsel just very briefly about scheduling up here at the bench?

(Bench conference as follows:)

THE COURT: Are you going to have anymore evidence?

No. Okay. I'll just ask you that on the record and you can say that in front of the jury and I'll let them go home for the day.

(Bench conference concluded.)

THE COURT: We'll now repeat what we said.

Mr. Tiller, is there any further evidence for Willowood?

MR. TILLER: None, Your Honor.

THE COURT: Okay. All right. Ladies and gentlemen, you've heard all of the evidence and it will be your job tomorrow to decide from this evidence what the facts are and to apply the law that I will give you to those facts. You'll have a number of questions to answer on a verdict sheet and we will have all of that ready for you in the morning. But because I have to talk to them and get all of that organized, I'm just going to let you go home for the day and we will start fresh in the morning with the closing arguments and then I'll instruct you on the law.

Now, even though you have heard all of the evidence, you've not heard the closing arguments of the attorneys and you haven't heard my final instructions on the law, so I want to instruct you and encourage you to keep an open mind. Wait until you've heard everything to start forming an opinion and wait until you start talking to your fellow jurors.

So we will take care of all of that tomorrow and my

best guess is you'll get the arguments in the morning, I'll instruct you on the law, and you all will start deliberating maybe right before lunch or right after lunch, something like that.

So I'm going to have you come back at 9:30. It's possible we might not get started just quite that early, but we're going to shoot for that.

I'll ask you again and instruct you not to have any contact with the lawyers, parties or witnesses. Do not look anything up online or conduct any independent investigation. Don't read or listen to any news reports that there may be about the case and, of course, don't talk or communicate about the matter.

I'll see you all at 9:30 in the morning. The jury is excused.

(The jury left the courtroom at 3:35 p.m.)

C E R T I F I C A T E

I, J. CALHOUN, RPR, United States District Court Reporter for the Middle District of North Carolina, DO HEREBY CERTIFY:

That the foregoing is a true and correct transcript of the proceedings had in the above-entitled matter.

Date: Date

J. Calhoun, RPR
United States Court Reporter
324 W. Market Street
Greensboro, NC 27401